

20750



000066148



**Rocky Mountain
Remediation Services L L C**
protecting the environment

Rocky Flats Environmental Technology Site
P O Box 464
Golden Colorado 80402-0464
Phone (303) 966-2729
Fax (303) 966-8244

February 18 1997

Randy Leitner Program Manager
Compliance & Performance Assurance
Building T130C
Kaiser Hill

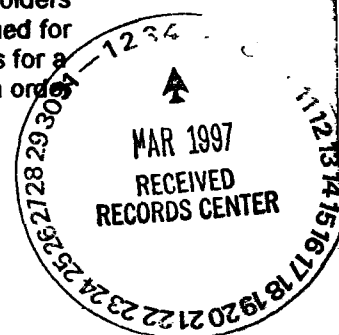
**RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PART B PERMIT
REAPPLICATION REVISED VERSION GRK 044-97**

Action Transmit revised Permit Reapplication

Rocky Mountain Remediation Services L L C (RMRS) is submitting the attached revised RCRA Part B Permit Reapplication for the Rocky Flats Environmental Technology Site. On October 30 1996 the Site submitted a RCRA permit reapplication to the Colorado Department of Public Health and Environment Hazardous Materials and Waste Management Division (Division) in accordance with the Colorado Hazardous Waste Regulations 6 CCR 1007 3 Section 100 41. Submittal of this timely application allowed the Site to continue to manage hazardous waste in permitted treatment and storage facilities pending final approval or denial of the application by the Division.

Over the past several months the following process has been employed to ensure that the RCRA permit resulting from this application meets the needs of both the permit holders and the Division. As the Division completed its review of a particular section or portion of the Reapplication questions concerns suggested language changes and requests for additional information were discussed with the permit holders. In addition the Division's representatives toured several waste management units to verify conditions and configurations indicated in the application. The results of the discussions are reflected in the enclosed document. This document represents to the greatest extent possible a proposed draft RCRA permit for the Division to issue for public review later this month. It is a compilation of all of the revised drawings and language resulting from discussions tours and requests for additional information which have taken place since the original submittal. Please note that the Division may include additional minor changes in the draft permit which have not been discussed in detail with the Site permit holders.

A major topic of the discussions focused on certain interim status units which the permit holders have decided not to permit. The majority of these units are not operational and are destined for closure with the exception of two tanks which will continue to operate under interim status for a period of time. All of these units were originally included in Part B of the Reapplication in order to ensure that interim status was not lost during the Reapplication review process.



**ADMIN RECORDS
SV-A-00420**

1/425

Both the Division and the permit holders have since agreed that interim status will not be lost for these units as long as they are included in Part A of the Reapplication. The following units are being withdrawn from Part B but will remain in Part A.

<u>Old Unit No</u>	<u>New Unit No</u>	<u>Tank No</u>	<u>Management Status</u>
43 01	374 3A	231A 231B	Operate in accordance with the Hazardous Waste Tank Systems Management Plan until replaced by new unit in Bldg 910
40 01	428 2	D-853	Document as RCRA Stable by 3/17/97
40 35	444 3	T-4	Document as RCRA Stable by 3/17/97
39 01	444 3	Roll Filter Table	Document as RCRA Stable by 3/17/97
40 36	444 3	Sump Tank	Document as RCRA Stable by 3/17/97
39 02	447 3	Roll Filter Table	Document as RCRA Stable by 3/17/97
40 37	447 3	Sump Tank T-6	Document as RCRA Stable by 3/17/97
40 04	444 2A	T 2	Document as RCRA Stable by 3/17/97
40 05	444 3B	T 3	Document as RCRA Stable by 3/17/97

Finally, certain new units had been proposed to be permitted for the first time under the Reapplication. The Division had two concerns with this approach.

1. This application is not necessarily the appropriate mechanism for permitting new units although exceptions could be allowed if this approach would best serve the protection of human health and the environment. Units 776 2 and 887 2 have been transferred to Part IV (Tank Systems) and Unit 374 3 has been retained in Part V (Treatment Units). All three of these units are to be permitted.

2. Some of the units proposed for permitting may not be ready to operate for several years if ever and are not yet sufficiently developed to permit.

The Division suggested that as plans for development and operation of such units becomes more definite, a permit modification would be appropriate to add them to the new permit. Accordingly, the following units are being withdrawn from both Part A and Part B.

774 3C Temporary Sludge Immobilization System
910 3 Aqueous Waste Evaporation
707 3B Ash Stabilization Process
707 3C Dry Residues Stabilization Process
371 3B Wet Processing

R M Leitner
GRK-044 97
Page 3

Changes which are reflected in the enclosures or in other documents provided to the Division are summarized below

- 1 A copy of the Site Area Plot Plan has been made available
- 2 Revised drawings for RCRA units are included
- 3 Laboratory and process procedures used to conduct waste analysis are identified
- 4 Inspection frequency for the Stacker Retriever is clarified
- 5 Inspection forms for treatment units have been provided
- 6 Certain unit specific storage conditions are clarified
- 7 The Closure Plan is revised to include a definition of RCRA Stable and clarify the closure performance standard associated with nnsate analysis and
- 8 The Training section is revised to include a matrix which identifies training requirements for Site personnel New training requirements were identified for environmental professionals

Draft letters to the Department of Energy Rocky Flats Field Office (DOE RFFO) and to CDPHE are attached for inclusion with the revised Reapplication We request that these materials be transmitted to DOE RFFO at your earliest convenience for submittal to CDPHE

If you have questions please contact me at extension 2729 or Natalie Van Tyne at extension 5893



Gary R. Konwinski
Environmental Manager

NCTVT

Attachments
As Stated (3)

cc w/attachment

K North
W M Wierzbicki
R D Sgrgnoli
F P Hughes
RMRS Records Center
File

KH (T130C)
SSOC (B750)
DCI (T130D)
RMRS (T130B)
RMRS (B116)
RMRS (T130F)

3

DRAFT

DRAFT

DRAFT

February xx 1997

96-RF xxxxx

Gail Hill
Environmental Liaison Division
Rocky Flats Field Office
U S Department of Energy

Attn David Grosek

**RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PERMIT REAPPLICATION
REVISED VERSION RML XXX 96**

Kaiser Hill Company L L C is submitted the enclosed revised RCRA Part B Permit Reapplication for the Rocky Flats Environmental Technology Site On October 30 1996 the Site submitted a RCRA permit reapplication to the Colorado Department of Public Health and Environment Hazardous Materials and Waste Management Division (Division) in accordance with the Colorado Hazardous Waste Regulations 6 CCR 1007 3 Section 100 41 Submittal of this timely application allowed the Site to continue to manage hazardous waste in permitted treatment and storage facilities pending final approval or denial of the application by the Division

Over the past several months the following process has been employed to ensure that the RCRA permit resulting from this application meets the needs of both the permit holders and the Division As the Division completed its review of a particular section or portion of the Reapplication questions concerns suggested language changes and requests for additional information were discussed with the permit holders In addition the Division's representatives toured several waste management units to verify conditions and configurations indicated in the application The results of the discussions are reflected in the enclosed document This document represents to the greatest extent possible a proposed draft RCRA permit for the Division to issue for public review later this month It is a compilation of all of the revised drawings and language resulting from discussions tours and requests for additional information which have taken place since the original submittal Please note that the Division may include additional minor changes in the draft permit which have not been discussed in detail with the Site permit holders

A major topic of the discussions focused on certain interim status units which the permit holders have decided not to permit The majority of these units are not operational and are destined for closure with the exception of two tanks which will continue to operate under interim status for a period of time All of these units were originally included in Part B of the Reapplication in order to ensure that interim status was not lost during the Reapplication review process

Both the Division and the permit holders have since agreed that interim status will not be lost for these units as long as they are included in Part A of the Reapplication The following units are being withdrawn from Part B but will remain in Part A

<u>Old Unit No</u>	<u>New Unit No</u>	<u>Tank No</u>	<u>Management Status</u>
43 01	374 3A	231A 231B	Operate in accordance with the Hazardous Waste Tank Systems Management Plan until replaced by new unit in Bldg 910
40 01	428 2	D-853	Document as RCRA Stable by 3/17/97
40 35	444 3	T 4	Document as RCRA Stable by 3/17/97
39 01	444 3	Roll Filter Table	Document as RCRA Stable by 3/17/97
40 36	444 3	Sump Tank	Document as RCRA Stable by 3/17/97
39 02	447 3	Roll Filter Table	Document as RCRA Stable by 3/17/97
40 37	447 3	Sump Tank T-6	Document as RCRA Stable by 3/17/97
40 04	444 2A	T 2	Document as RCRA Stable by 3/17/97
40 05	444 3B	T 3	Document as RCRA Stable by 3/17/97

Finally certain new units had been proposed to be permitted for the first time under the Reapplication. The Division had two concerns with this approach.

1 This application is not necessarily the appropriate mechanism for permitting new units although exceptions could be allowed if this approach would best serve the protection of human health and the environment. Units 776 2 and 887 2 have been transferred to Part IV (Tank Systems) and Unit 374 3 has been retained in Part V (Treatment Units). All three of these units are to be permitted.

2 Some of the units proposed for permitting may not be ready to operate for several years if ever and are not yet sufficiently developed to permit.

The Division suggested that as plans for development and operation of such units becomes more definite a permit modification would be appropriate to add them to the new permit. Accordingly the following units are being withdrawn from both Part A and Part B.

- 774 3C Temporary Sludge Immobilization System
- 910 3 Aqueous Waste Evaporation
- 707 3B Ash Stabilization Process
- 707 3C Dry Residues Stabilization Process
- 371 3B Wet Processing

Changes which are reflected in the enclosures or in other documents provided to the Division are summarized below.

5

Attachment 1
GRK 044 97
Page 3 of 3

- 1 A copy of the Site Area Plot Plan has been made available
 - 2 Revised drawings for RCRA units are included
 - 3 Laboratory and process procedures used to conduct waste analysis are identified
 - 4 Inspection frequency for the Stacker Retriever is clarified
 - 5 Inspection forms for treatment units have been provided
 - 6 Certain unit specific storage conditions are clarified
 - 7 The Closure Plan is revised to include a definition of RCRA Stable and clarify the closure performance standard associated with onsite analysis and
 - 8 The Training section is revised to include a matrix which identifies training requirements for Site personnel New training requirements were identified for environmental professionals
- A draft letter to CDPHE is enclosed for inclusion with the revised Reapplication We request that these materials be submitted to CDPHE at your earliest convenience
- If you have questions please contact me at extension 3537 or Natalie Van Tyne of RMRS at extension 5893

Randy Leitner Program Manager
Compliance & Performance Assurance

Enclosure
As Stated (2)

Original and 1 cc Gail Hill

Distribution w/attachment

D Maxwell

K North

N C T Van Tyne

DOE RFFO

KH

RMRS

6

DRAFT

DRAFT

DRAFT

Mr Joe Scherffelin Unit Leader
Hazardous Waste Monitoring and Enforcement
Colorado Department of Public Health and the Environment
4300 Cherry Creek Drive South
Denver Colorado 80222 1530

Dear Mr Scherffelin

Pursuant to the requirements of 6 CCR 1007 3 Section 100 41 for submittal of a RCRA Part B Permit Reapplication for the Rocky Flats Environmental Technology Site the United States Department of Energy Rocky Flats Field Office (DOE RFFO) is submitting the revised RCRA Part B Permit Reapplication for the Rocky Flats Environmental Technology Site On October 30 1996 the Site submitted a RCRA permit reapplication to the Colorado Department of Public Health and Environment Hazardous Materials and Waste Management Division (Division) in accordance with the Colorado Hazardous Waste Regulations 6 CCR 1007 3 Section 100 41 Submittal of this timely application allowed the Site to continue to manage hazardous waste in permitted treatment and storage facilities pending final approval or denial of the application by the Division

Over the past several months the following process has been employed to ensure that the RCRA permit resulting from this application meets the needs of both the permit holders and the Division As the Division completed its review of a particular section or portion of the Reapplication questions concerns suggested language changes and requests for additional information were discussed with the permit holders In addition the Division's representatives toured several waste management units to verify conditions and configurations indicated in the application The results of the discussions are reflected in the enclosed document This document represents to the greatest extent possible a proposed draft RCRA permit for the Division to issue for public review later this month It is a compilation of all of the revised drawings and language resulting from discussions tours and requests for additional information which have taken place since the original submittal Please note that the Division may include additional minor changes in the draft permit which have not been discussed in detail with the Site permit holders

A major topic of the discussions focused on certain interim status units which the permit holders have decided not to permit The majority of these units are not operational and are destined for closure with the exception of two tanks which will continue to operate under interim status for a period of time All of these units were originally included in Part B of the Reapplication in order to ensure that interim status was not lost during the Reapplication review process

Both the Division and the permit holders have since agreed that interim status will not be lost for these units as long as they are included in Part A of the Reapplication The following units are being withdrawn from Part B but will remain in Part A

7

<u>Old Unit No</u>	<u>New Unit No</u>	<u>Tank No</u>	<u>Management Status</u>
43 01	374 3A	231A 231B	Operate in accordance with the Hazardous Waste Tank Systems Management Plan until replaced by new unit in Bldg 910
40 01	428 2	D-853	Document as RCRA Stable by 3/17/97
40 35	444 3	T-4	Document as RCRA Stable by 3/17/97
39 01	444 3	Roll Filter Table	Document as RCRA Stable by 3/17/97
40 36	444 3	Sump Tank	Document as RCRA Stable by 3/17/97
39 02	447 3	Roll Filter Table	Document as RCRA Stable by 3/17/97
40 37	447 3	Sump Tank T-6	Document as RCRA Stable by 3/17/97
40 04	444 2A	T 2	Document as RCRA Stable by 3/17/97
40 05	444 3B	T 3	Document as RCRA Stable by 3/17/97

Finally certain new units had been proposed to be permitted for the first time under the Reapplication. The Division had two concerns with this approach

1 This application is not necessarily the appropriate mechanism for permitting new units although exceptions could be allowed if this approach would best serve the protection of human health and the environment. Units 776 2 and 887 2 have been transferred to Part IV (Tank Systems) and Unit 374 3 has been retained in Part V (Treatment Units). All three of these units are to be permitted.

2 Some of the units proposed for permitting may not be ready to operate for several years if ever and are not yet sufficiently developed to permit.

The Division suggested that as plans for development and operation of such units becomes more definite a permit modification would be appropriate to add them to the new permit. Accordingly the following units are being withdrawn from both Part A and Part B

- 774 3C Temporary Sludge Immobilization System
- 910 3 Aqueous Waste Evaporation
- 707 3B Ash Stabilization Process
- 707 3C Dry Residues Stabilization Process
- 371 3B Wet Processing

Changes which are reflected in the enclosures or in other documents provided to the Division are summarized below

8

- 1 A copy of the Site Area Plot Plan has been made available
- 2 Revised drawings for RCRA units are included
- 3 Laboratory and process procedures used to conduct waste analysis are identified
- 4 Inspection frequency for the Stacker Retriever is clarified
- 5 Inspection forms for treatment units have been provided
- 6 Certain unit specific storage conditions are clarified
- 7 The Closure Plan is revised to include a definition of RCRA Stable and clarify the closure performance standard associated with rinse analysis and
- 8 The Training section is revised to include a matrix which identifies training requirements for Site personnel. New training requirements were identified for environmental professionals

If you have questions please contact David Grosek of my staff at 966-3305

Gail Hill Acting Director
Environmental Liaison Division

Enclosure

cc w/enclosure

C Gilbreath
D Grosek
D Maxwell
R M Leitner
W M Wierzbicki
R Sgrignoli
G R Konwinski
N C T Van Tyne

CDPHE
DOE RFFO
DOE RFFO
KH
SSOC
DCI
RMRS
RMRS

9

RCRA PART A APPLICATION
(MODIFIED TO REFLECT UNIT STATUS IN RCRA PART B
PERMIT REAPPLICATION)
COMBINED HAZARDOUS WASTE, LOW LEVEL MIXED WASTE,
TRU MIXED WASTE, AND MIXED RESIDUE UNITS

U S DEPARTMENT OF ENERGY
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
GOLDEN, COLORADO

FEBRUARY 10, 1997


This document contains the revised combined Part A application for the storage and treatment of hazardous low level mixed and TRU mixed wastes and mixed residues at the U S Department of Energy (DOE) Rocky Flats Environmental Technology Site (RFETS)

The original Part A was submitted on November 14 1980 Revised Part A and B applications and permit modification requests have been submitted to the U S Environmental Protection Agency (EPA) Region VIII and to the Colorado Department of Public Health and Environment (CDPHE) as noted below Note The following is intended to reflect all revisions to Part A Application Permit modifications for which a revision to the Part A was not necessary are not shown in the following list.

May 31 1985	Hazardous Part A to CDPHE and EPA
November 1 1985	Hazardous Parts A and B to CDPHE
November 8 1985	Low Level Mixed Parts A and B to EPA
November 5 1986	Part A (to add certain Low Level Mixed Wastes) to CDPHE and EPA
November 28 1986	Revision 0 Hazardous and Low Level Mixed Parts A and B to CDPHE and EPA
October 9 1987	Revision 0 TRU Mixed Part A to CDPHE and EPA
December 15 1987	Revision 1 Hazardous and Low Level Mixed Parts A and B to CDPHE and EPA
April 13 1988	Revision 2 Hazardous and Low Level Mixed Parts A and B to CDPHE and EPA
June 7 1988	Revision 1 TRU Mixed Part A to CDPHE and EPA
July 1 1988	Revision 0 TRU Mixed Part B to CDPHE and EPA
August 2 1988	Revision 3 Hazardous and Low Level Mixed Part A to CDPHE and EPA
August 16 1989	Revision 0 Combined Hazardous Low Level and TRU Mixed Part A to CDPHE
October 20 1989	Revision 2 TRU Mixed Part A to CDPHE and EPA
October 31 1989	Revision 3 TRU Mixed Part A to CDPHE and EPA
October 31 1989	Revision 4 Hazardous and Low Level Mixed Part A to CDPHE and EPA
November 1 1989	Revision 4 TRU Mixed Part A to CDPHE and EPA
January 3 1990	Revision 5 Hazardous and Low Level Mixed Part A to CDPHE and EPA
March 30 1990	Revision 3 Hazardous and Mixed Part B (response to Notice of Intent to Deny) to CDPHE
June 22 1990	Revision 6 Hazardous and Low Level Mixed Part A to CDPHE
June 11 1991	Revision 7 Hazardous and Low Level Mixed Part A to CDPHE
June 11 1991	Revision 5 TRU Mixed Part A, to CDPHE

July 5 1991	Revision 8 Hazardous and Low Level Mixed Part A to CDPHE
July 5 1991	Revision 6 TRU Mixed Part A to CDPHE
August 13 1991	Revision 1 Combined Hazardous Low Level and TRU Mixed Part A to CDPHE
October 30 1991	Part B Operating Permit Effective Date
January 1992	Revision 2 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A to CDPHE
January 1992	Revision 3 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A with Permit Modification Number 4 to CDPHE
May 1992	Revision 4 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A (requesting additional miscellaneous waste codes) to CDPHE
June 1992	Revision 5 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A with Permit Modification Number 8 to CDPHE
August 1992	Revision 6 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A with Permit Modification Number 9 to CDPHE
July 1992	Revision 7 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A (requesting the addition of a pondcrete solidification process) to CDPHE
N/A	Revision 8 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A was not submitted
N/A	Revision 9 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A was not submitted
November 1992	Revision 10 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A with Permit Modification Number 12 to CDPHE
May 1993	Revision 11 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A (requesting a portion of Unit 15 be designated a waste pile) to CDPHE (Note This request was withdrawn on 3/23/94)
December 1993	Revision 12 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A with Permit Modification Number 10 (requesting the addition of waste codes to units 1 10 13 and 15A) to CDPHE
November 1993	Revision 13 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A (requesting the addition of storage in tanks to unit 25) to CDPHE
January 1994	Revision 14 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A (requesting deletion of Unit 18 01 and the addition of waste codes to Units 18 03 and 18 04) to CDPHE
March 1994	Revision 15 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A with Permit Modification Number 17 (requesting additional storage capacity and storage of low level mixed waste at Unit 1) to CDPHE

March 1994	Revision 16 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A with Permit Modification Number 19 (requesting the addition of Unit 14 Building 906 the Centralized Waste Storage Facility) to CDPHE
April 1994	Revision 17 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A was a revision to include those interim status and permitted storage and treatment units which had been approved by CDPHE It also included a list of mixed residue units which did not have interim status or a permit but for which a Part B Application has been submitted to CDPHE Also included were certain newly promulgated toxicity characteristic waste codes for which RFETS requested approval and provided supporting documentation but regulatory approval was not received
N/A	Revision 18 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A was not submitted
N/A	Revision 19 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A was not submitted
August 1994	Revision 20 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A was a revision to reflect changes to Units 11 61 62 69 74 and 39 Changes included a variety of EPA Codes for hazardous waste stored on site
December 1994	Revision 21 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A was a revision to the Combined Part A Application that incorporated approval of Permit Modification Numbers 17 and 19
N/A	Revision 22 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A was not submitted
June 1995	Revision 23 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A was a revision to reformat the Combined Part A Application and reflect a change in operator
July 1996	Revision 24 Combined Hazardous Low Level Mixed TRU Mixed and Mixed Residues Part A is a revision to reflect closure of units and approval of modifications to the Part B Permit. It also reflects the addition of previously approved codes for Units 3 4 49 and 53 Note Toxicity characteristic waste codes that were added in Revision 17 but not approved by CDPHE have subsequently been approved through modifications to the Part B Permit or deleted from this revision to the Part A Application
October 1996	Part A Permit Reapplication is a Part A Application which reflects the unit designations in the Part B Permit Reapplication. It includes all unit specific changes to permitted and interim status units since Revision 24 and reflects closure of certain units under interim status regulations
February 1997	Part A Permit Reapplication Revision 1 is a Part A Application which reflects <u>modifications proposed to unit designations in the Part B Permit</u> <u>Reapplication since October 1996</u>

For EPA Regional Use Only		 United States Environmental Protection Agency Washington, DC 20460		For State Use Only	
		<h1>Hazardous Waste Permit Application</h1> <h2>Part A</h2> <p>(Read the Instructions before starting)</p>			
Date Received Month Day Year					
I ID Number(s)					
A. EPA ID Number		B. Secondary ID Number (If applicable)			
C 0 7 8 9 0 0 1 0 5 2 6					
II Name of Facility					
U S D O E R O C K Y F L A T S E N V T E C S I T E					
III Facility Location (Physical address not P O Box or Route Number)					
A Street					
S E C T I O N 2 R A N G E 7 0 W					
Street (continued)					
T O W N S H I P 2 5					
City or Town		State		ZIP Code	
G O L D E N		C O		8 0 4 0 2 0 9 2 8	
County Code (known)		County Name			
		J E F F E R S O N			
B Land Type		C Geographic Location		D Facility Existence Date	
(enter code)		LATITUDE (degrees, minutes, & seconds)		LONGITUDE (degrees, minutes, & seconds)	
F		3 9 5 3 0 3 0		1 0 5 1 1 0 3 0	
				Month Day Year	
				1 9 5 1	
IV Facility Mailing Address					
Street or P O Box					
P O S T O F F I C E B O X 9 2 8					
City or Town		State		ZIP Code	
G O L D E N		C O		8 0 4 0 2 0 9 2 8	
V Facility Contact (Person to be contacted regarding waste activities at facility)					
Name (last)		(first)			
A P R I L		B O B			
Job Title		Phone Number (area code and number)			
R C R A P E R M I T A D M		3 0 3 9 6 6 4 2 9 8			
VI Facility Contact Address (See Instructions)					
A Contact Address Location Mailing		B Street or P O Box			
City or Town		State		ZIP Code	

EPA Form 8700 23 101 901

EPA ID Number (enter from page 1)												Secondary ID Number (enter from page 1)											
C	0	7	8	9	0	0	1	0	5	2	6												

XI Nature of Business (provide a brief description)

Manage waste and materials clean up and convert the Rocky Flats Environmental Technology Site to beneficial use in a manner that is safe environmentally and socially responsible physically secure and cost-effective

XII Process - Codes and Design Capacities

- A PROCESS CODE** - Enter the code from the list of process codes below that best describes each process to be used at the facility. Twelve lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. If a process will be used that is not included in the list of codes below, then describe the process (including the design capacity) in the space provided in Item XIII.
- B PROCESS DESIGN CAPACITY** - For each code entered in column A, enter the capacity of the process.
- 1. AMOUNT** - Enter the amount. In a case where design capacity is not applicable (such as in the case of a cleanup or enforcement action) enter the total amount of waste for that process unit.
 - 2. UNIT OF MEASURE** - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure listed below should be used.
- C PROCESS TOTAL NUMBER OF UNITS** - Enter the total number of units used with the corresponding process code.

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	UNIT OF MEASURE	UNIT OF MEASURE CODE
	<u>DISPOSAL</u>		GALLONS	G
D79	INJECTION WELL	GALLONS LITERS GALLONS PER DAY OR LITERS PER DAY	GALLONS PER HOUR	E
D80	LANDFILL	ACRE FEET OR HECTARE METER	GALLONS PER DAY	U
D81	LAND APPLICATION	ACRES OR HECTARES	LITERS	L
D82	OCEAN DISPOSAL	GALLONS PER DAY OR LITERS PER DAY	LITERS PER HOUR	H
D83	SURFACE IMPOUNDMENT	GALLONS OR LITERS	LITERS PER DAY	V
	<u>STORAGE</u>		SHORT TONS PER HOUR	D
S01	CONTAINER (barrel drum etc)	GALLONS OR LITERS	METRIC TONS PER HOUR	W
S02	TANK	GALLONS OR LITERS	SHORT TONS PER DAY	N
S03	WASTE PILE	CUBIC YARDS OR CUBIC METERS	METRIC TONS PER DAY	S
S04	SURFACE IMPOUNDMENT	GALLONS OR LITERS	POUNDS PER HOUR	J
	<u>TREATMENT</u>		KILOGRAMS PER HOUR	R
T01	TANK	GALLONS PER DAY OR LITERS PER DAY	CUBIC YARDS	Y
T02	SURFACE IMPOUNDMENT	GALLONS PER DAY OR LITERS PER DAY	CUBIC METERS	C
T03	INCINERATOR	SHORT TONS PER HOUR, METRIC TONS PER HOUR GALLONS PER HOUR; LITERS PER HOUR OR BTU'S PER HOUR	ACRES	B
			ACRE FEET	A
			HECTARES	Q
			HECTARE METER	F
			BTU'S PER HOUR	K
T04	OTHER TREATMENT	GALLONS PER DAY LITERS PER DAY POUNDS PER HOUR SHORT TONS PER HOUR KILOGRAMS PER HOUR METRIC TONS PER DAY METRIC TONS PER HOUR OR SHORT TONS PER DAY		
	(Use for physical chemical thermal or biological treatment processes not occurring in tanks, surface impoundment or incinerators. Describe the processes in the space provided in Item XIII.)			

EPA ID Number (enter from page 1)	Secondary ID Number (enter from page 1)
C 0 7 8 9 0 0 1 0 5 2 6	

XII Process - Codes and Design Capacities (continued)

EXAMPLE FOR COMPLETING ITEM XII (shown in line numbers X 1 and X 2 below). A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour

Line Number	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		C. PROCESS TOTAL NUMBER OF UNITS	FOR OFFICIAL USE ONLY
		1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)		
X 1	S 0 2	600	G	0 0 2	
X 2	T 0 3	20	E	0 0 1	
1		(SEE ATTACHMENT 2)			
2					
3					
4					
5					
6					
7					
8					
9					
1 0					
1 1					
1 2					

NOTE: If you need to list more than 12 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially taking into account any lines that will be used for additional treatment processes in Item XIII.

XIII Additional Treatment Processes (follow instructions from Item XII)

Line Number (enter numbers in sequence with Item XI)	A. PROCESS CODE	B. TREATMENT PROCESS DESIGN CAPACITY		C. PROCESS TOTAL NUMBER OF UNITS	D. DESCRIPTION OF PROCESS
		1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)		
	T 0 4				
	T 0 4				
	T 0 4				
	T 0 4				

17

EPA ID Number (enter from page 1)	Secondary ID Number (enter from page 1)
<div style="display: flex; justify-content: space-between;"> C 07890010526 </div>	<div style="display: flex; justify-content: space-between;"> </div>

XIV Description of Hazardous Wastes

- A. EPA HAZARDOUS WASTE NUMBER** Enter the four digit number from 40 CFR Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR Part 261 Subpart D enter the four digit number(s) from 40 CFR Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.
- B. ESTIMATED ANNUAL QUANTITY** - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant
- C. UNIT OF MEASURE** For each quantity entered in column B enter the unit of measure code Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste

D. PROCESSES

1 PROCESS CODES.

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate how the waste will be stored treated and/or disposed of at the facility

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that processes that characteristic or toxic contaminant.

NOTE. THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED

- 1 Enter the first two as described above
- 2 Enter 000 in the extreme right box of Item XIV D(1).
- 3 Enter in the space provided on page 7 Item XIV E, the line number and the additional code(s).

2 PROCESS DESCRIPTION. If a code is not listed for a process that will be used describe the process in the space provided on the form (D(2)).

NOTE. HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

- 1 Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
- 2 In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "Included with above" and make no other entries on that line
- 3 Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA HAZARDOUS WASTE NUMBER (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESS									
				D(1) PROCESS CODES (enter)						D(2) PROCESS DESCRIPTION (If a code is not entered in D(1))			
X-1	K 0 5 4	900	P	T	0	3	D	8	0	(SEE ATTACHMENT 2)			
X-2	D 0 0 2	400	P	T	0	3	D	8	0				
X-3	D 0 0 1	100	P	T	0	3	D	8	0				
X-4	D 0 0 2									Included With Above			

19

[illegible]

ATTACHMENT 1

ITEM X EXISTING ENVIRONMENTAL PERMITS

The Rocky Flats Environmental Technology Site has filed Air Pollution Emission Notices (APENS) with CDPHE for regulated source emissions. The APENS are technical information documents whereby CDPHE will determine which air sources will be permitted.

<u>Permit Type</u>	<u>Permit Number</u>	<u>Description</u>
R	91 09 30 01	State RCRA Permit
R	CO7890010526	RCRA Interim Status
N	CO 0001333	Clean Water Act NPDES permit
E	86JE018	Clean Air Act Bldg 123 urinalysis laboratory fume hood permit
E	93JE542	Clean Air Act Bldg 374 salt crete operations
E	91JE047	Bldg 776 Supercompactor air permit
E	92JE833(1 4)	Bldg 433 steam plant boilers air permit (4 units)
E	91JE316 1	Bldg 910 three natural gas generators
E	91JE316 2	Bldg 910 one natural gas water heater
E	93JE1349	Emergency generators Buildings 112 120 566 708(B) 708(C) 715A 776 881G (2 units) 920 762A (PACS-1) 372A (PACS 2) 792A (PACS 3) Portals A and B 124 127 371 427 443 (2 units) 559 562 708(A) 715 727 729 779 827 989 ER 320 kW generators (2 units) and the ER generator trailers Diesel fired pumps Buildings 373 708 711 and 928 Air compressors Buildings 995 and 331
E	94JE282	Sanitary Landfill Construction

N= NPDES (National Pollutant Discharge Elimination System)

R= RCRA (Resource Conservation and Recovery Act)

E= Other environmental permits (State permits for new air emission sources in non attainment areas under Part D of the Clean Air Act)

ATTACHMENT 2

Attachment 2 contains the information requested in items XII XIII and XIV of the EPA Part A Permit Application Form for each of the interim status units and Part B permitted units at the Rocky Flats Environmental Technology Site

The following attachment lists the unit number unit name process code(s) design capacity waste type(s) EPA hazardous waste codes estimated annual quantity of waste and permitting status for each unit The process code(s) associated with each unit are listed and defined on page 3 of the EPA Part A application form A description of the process is given for each treatment unit with a T04 process code

Estimated annual quantities of waste are given in tons Due to variability in process operations and shipping status of the wastes the annual quantities of waste handled at each unit may change considerably in the future Wastes are generally transferred through more than one unit from the point of generation to final off site shipment thus annual quantities of waste reported in Attachment 2 are not equivalent to waste generation rates at the facility For example, a drum of combustibles may be stored in Unit 776 1 or 371 1 for interim storage after counting be transferred to Unit 776 3 for size reduction moved to Unit 59 for assay and relocated to Unit 20 for off site shipment

Unit Number	1
Unit Name	Main Hazardous Waste Storage Area Building 750 Parking Lot
Process Code	S01 T04
Design Capacity	Maximum Capacity 123 330 Gallons and 50 Cubic Meters of gas at STP
	Liquid Capacity Limit 123 330 Gallons
Waste Type(s)	Hazardous Low Level Mixed
Process Total Number of Units	1
Description of Treatment	Absorbent may be added to various types of waste In addition fluorescent lamps may be crushed in this unit
EPA Hazardous Waste Codes	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D012 D015 D016 D017 D018 D019 D021 D022 D023 D024 D025 D026 D027 D028 D029 D030 D033 D035 D036 D037 D038 D039 D040 D041 D042 D043 F001 F002 F003 F005 F006 F007 F009 F027 P002 P003 P004 P005 P010 P011 P012 P014 P015 P016 P018 P022 P024 P027 P028 P029 P030 P048 P050 P051 P059 P063 P074 P077 P087 P089 P092 P093 P098 P101 P104 P105 P106 P108 P113 P116 P119 P120 P121 P123 U002 U003 U004 U007 U008 U009 U012 U018 U019 U022 U027 U028 U030 U031 U034 U036 U037 U041 U042 U043 U044 U047 U048 U050 U052 U053 U055 U056 U057 U060 U061 U063 U067 U068 U069 U070 U071 U072 U073 U075 U077 U078 U079 U080 U081 U082 U083 U084 U088 U098 U101 U102 U103 U105 U106 U107 U108 U112 U113 U116 U117 U118 U120 U122 U123 U127 U128 U129 U130 U131 U134 U137 U138 U140 U144 U145 U147 U148 U151 U154 U159 U160 U161 U162 U165 U166 U169 U170 U173 U179 U188 U190 U191 U196 U197 U201 U202 U204 U207 U208 U209 U210 U211 U213 U214 U215 U216 U217 U218

22

U219 U220 U221 U222 U225 U226 U227 U228 U234
U235 U238 U239 U240 U247 U328 U353 U359

Estimated Annual Quantity of Waste 66 8 Tons
Unit Permitting Status Permitted

Unit Number 3
Unit Name Drum Storage Area. Building 444/447
Process Code S01
Design Capacity 0
Waste Type Hazardous
Process Total Number of Units 1
Description of Treatment N/A
EPA Hazardous Waste Codes D002 D004 D006 D007 D011 F007 F009
Estimated Annual Quantity of Waste 0
Unit Permitting Status Interim Status To Be Closed

Unit Number 10
Unit Name Container Storage Area near Building 561
Process Code S01
Design Capacity Maximum Capacity 20 800 Gallons
Liquid Capacity Limit 20 800 Gallons
Waste Type Low Level Mixed
Process Total Number of Units 1
EPA Hazardous Waste Codes
D001 D002 D003 D004 D005 D006 D007 D008 D009
D010 D011 D012 D015 D016 D017 D018 D019 D021
D022 D023 D024 D025 D026 D027 D028 D029 D033
D035 D036 D037 D038 D039 D040 D041 D042 D043
F001 F002 F003 F005 F006 F007 F009 F027 P002 P003
P005 P010 P011 P012 P014 P015 P016 P018 P022 P024
P027 P028 P029 P030 P048 P051 P059 P074 P077 P087
P092 P093 P098 P101 P104 P105 P106 P108 P113 P116
P119 P121 P123 U002 U003 U004 U007 U008 U009
U012 U018 U019 U020 U022 U027 U028 U030 U031
U034 U036 U037 U041 U042 U043 U044 U047 U048
U050 U052 U053 U055 U056 U057 U063 U067 U068
U069 U070 U071 U072 U073 U075 U077 U078 U079
U080 U081 U082 U083 U084 U088 U098 U101 U102
U103 U105 U106 U107 U108 U112 U113 U116 U117
U118 U120 U122 U123 U127 U128 U129 U130 U131
U134 U137 U138 U140 U144 U147 U148 U151 U154
U159 U161 U162 U165 U166 U169 U170 U173 U179
U188 U190 U191 U196 U197 U201 U202 U204 U207
U208 U209 U210 U211 U213 U214 U215 U216 U217
U218 U219 U220 U222 U225 U226 U227 U228 U235
U238 U239 U240 U328 U353 U359

Estimated Annual Quantity of Waste 16 4 Tons
Unit Permitting Status Permitted

Unit Number 13
Unit Name Mixed Waste Storage Building 884
Process Code S01

Design Capacity	Maximum Capacity 55 440 Gallons
	Liquid Capacity Limit 36 960 Gallons
Waste Type	Low Level Mixed
Process Total Number of Units	1
EPA Hazardous Waste Codes	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D012 D015 D016 D017 D018 D019 D021 D022 D023 D024 D025 D026 D027 D028 D029 D033 D035 D036 D037 D038 D039 D040 D041 D042 D043 F001 F002 F003 F005 F006 F007 F009 F027 P015
Estimated Annual Quantity of Waste	11 1 Tons
Unit Permitting Status	Permitted

Unit Number	14
Unit Name	Centralized Waste Storage Facility Building 906
Process Code	S01
Design Capacity	Maximum Capacity 1 050 400 gallons (5 200 Cubic Yards)
	Liquid Capacity Limit. 5,500 Gallons
Waste Type	Hazardous Low Level Mixed TRU Mixed
Process Total Number of Units	1
EPA Hazardous Waste Codes	D001 D003 D004 D005 D006 D007 D008 D009 D010 D011 D016 D017 D018 D019 D021 D022 D024 D025 D026 D027 D028 D029 D035 D036 D037 D038 D039 D040 D041 D043 F001 F002 F003 F005 F006 F007 F008 F009 F027 F039 P011 P012 P014 P015 P022 P028 P029 P045 P062 P076 P087 P098 P101 P104 P105 P106 P113 P119 P120 P121 U002 U003 U004 U019 U031 U037 U041 U042 U044 U055 U056 U057 U067 U071 U074 U075 U077 U079 U080 U084 U098 U102 U107 U108 U112 U120 U121 U122 U123 U127 U131 U133 U134 U138 U144 U148 U151 U154 U158 U159 U161 U162 U165 U167 U169 U170 U188 U190 U191 U196 U201 U207 U209 U210 U211 U213 U214 U215 U216 U217 U218 U219 U220 U225 U227 U228 U236 U239 U246 U328 U353 U359
Estimated Annual Quantity of Waste	2 500 Tons
Unit Permitting Status	Permitted

Unit Number	15A
Unit Name	Container Storage Area 904 Pad Cargo Container Area
Process Code	S01 T04
Design Capacity	Maximum Capacity 71 565 gallons in drums in cargo containers and 151 470 gallons in crates
	Liquid Capacity Limit 71 565 gallons in cargo containers
Waste Type	Low Level Mixed
Process Total Number of Units	1
Description of T04 Process	Absorbent may be added to various types of waste In addition fluorescent lamps may be crushed in this unit.
EPA Hazardous Waste Codes	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D012 D015 D016 D017 D018 D019 D021, D022 D023 D024 D025 D026 D027 D028 D029 D033 D035 D036 D037 D038 D039 D040 D041 D042 D043 F001 F002 F003 F005 F006 F007 F009 F027 P002 P003

P005 P010 P011 P012 P014 P015 P016 P018 P022 P024
 P027 P028 P029 P030 P048 P051 P059 P074 P077 P087
 P092 P093 P098 P101 P104 P105 P106 P108 P113 P116
 P119 P121 P123 U002 U003 U004 U007 U008 U009
 U012 U018 U019 U022 U027 U028 U030 U031 U034
 U036 U037 U041 U042 U043 U044 U047 U048 U050
 U052 U053 U055 U056 U057 U063 U067 U068 U069
 U070 U071 U072 U073 U075 U077 U078 U079 U080
 U081 U082 U083 U084 U088 U098 U101 U102 U103
 U105 U106 U107 U108 U112 U113 U116 U117 U118
 U120 U122 U123 U127 U128 U129 U130 U131 U134
 U137 U138 U140 U144 U147 U148 U151 U154 U159
 U161 U162 U165 U166 U169 U170 U173 U179 U188
 U190 U191 U196 U197 U201 U202 U204 U207 U208
 U209 U210 U211 U213 U214 U215 U216 U217 U218
 U219 U220 U222 U225 U226 U227 U228 U235 U238
 U239 U240 U328 U353 U359

Estimated Annual Quantity of Waste 10 Tons
 Unit Permitting Status Permitted

Unit Number 15B
 Unit Name Mixed Waste Storage Area 904 Pad Tent 7
 Process Code S01
 Design Capacity Maximum Capacity 15 981 Cubic Yards
 Liquid Capacity Limit 13 975 Cubic Yards
 Waste Type Hazardous Low Level Mixed
 Process Total Number of Units 1

EPA Hazardous Waste Codes
 D001 D002 D003 D004 D005 D006 D007 D008 D009
 D010 D011 D018 D019 D022 D028 D029 D035 D038
 D040 D043 F001 F002 F003 F005 F006 F007 F009
 F039 P002 P003 P005 P010 P011 P012 P014 P015 P016
 P018 P022 P024 P027 P028 P029 P030 P048 P051 P059
 P074 P077 P087 P092 P093 P098 P101 P104 P105 P106
 P108 P113 P116 P119 P121 P123 U002 U003 U004
 U007 U008 U009 U012 U018 U019 U022 U027 U028
 U030 U031 U034 U036 U037 U041 U042 U043 U044
 U047 U048 U050 U052 U053 U055 U056 U057 U063
 U067 U068 U069 U070 U071 U072 U073 U075 U077
 U078 U079 U080 U081 U082 U083 U084 U088 U098
 U101 U102 U103 U105 U106 U107 U108 U112 U113
 U116 U117 U118 U120 U122 U123 U127 U128
 U129 U130 U131 U134 U137 U138 U140 U144 U147
 U148 U151 U154 U159 U161 U162 U165 U166 U169
 U170 U173 U179 U188 U190 U191 U196 U197 U201
 U202 U204 U207 U208 U209 U210 U211 U213 U214
 U215 U216 U217 U218 U219 U220 U222 U225 U226
 U227 U228 U235 U238 U239 U240 U328 U353 U359

Estimated Annual Quantity of Waste 655 2 Tons
 Unit Permitting Status Permitted

Unit Number 18 03
 Unit Name Environmental Waste Storage Unit

Process Code	S01
Design Capacity	Maximum Capacity 472 245 Gallons Liquid Capacity Limit 92 400 Gallons
Waste Type	Hazardous Low Level Mixed
Process Total Number of Units	1
EPA Hazardous Waste Codes	D001 D002 D004 D005 D006 D007 D008 D009 D011 D019 D022 D027 D028 D029 D035 D039 D040 D043 F001 F002 F005 F006 F007 F009
Estimated Annual Quantity of Waste	1 000 Tons
Unit Permitting Status	Permitted

Unit Number	18 04
Unit Name	Environmental Waste Storage Unit
Process Code	S01
Design Capacity	Maximum Capacity 182 406 gallons (903 Cubic Yards) Liquid Capacity Limit 87 340 Gallons
Waste Type	Hazardous Low Level Mixed
Process Total Number of Units	1
EPA Hazardous Waste Codes	D004 D005 D006 D007 D008 D009 D011 D019 D022 D027 D028 D029 D035 D039 D040 D043 F001 F002 F003 F005 F006 F007 F009 F039
Estimated Annual Quantity of Waste	1 000 Tons
Unit Permitting Status	Permitted

Unit Number	20
Unit Name	Shipping and Storage Area Building 664
Process Code	S01
Design Capacity	Maximum Capacity 230 248 Gallons Liquid Capacity Limit 1 760 Gallons
Waste Type	Hazardous Low Level Mixed TRU Mixed Mixed Residues
Process Total Number of Units	1
EPA Hazardous Waste Codes	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D016 D017 D018 D019 D021 D022 D024 D025 D026 D027 D028 D029 D030 D035 D036 D037 D038 D039 D040 D041 D043 F001 F002 F003 F005 F006 F007 F008 F009 F027 P002 P003 P005 P010 P011 P012 P014 P015 P016 P018 P022 P024 P027 P028 P029 P030 P045 P048 P051 P059 P062 P074 P076 P077 P087 P092 P093 P098 P101 P104 P105 P106 P108 P113 P116 P119 P120 P121 P123 U002 U003 U004 U007 U008 U009 U012 U018 U019 U022 U027 U028 U030 U031 U034 U036 U037 U041 U042 U043 U044 U047 U048 U050 U052 U053 U055 U056 U057 U063 U067 U068 U069 U070 U071 U072 U073 U074 U075 U077 U078 U079 U080 U081 U082 U083 U084 U088 U098 U101 U102 U103 U105 U106 U107 U108 U112 U113 U116 U117 U118 U120 U121 U122 U123 U127 U128 U129 U130 U131 U133 U134 U137 U138 U140 U144 U147 U148 U151 U154 U158 U159 U161 U162 U165 U166 U167 U169 U170 U173 U179 U188 U190 U191 U196 U197 U201 U202 U204 U207 U208 U209 U210 U211

U213 U214 U215 U216 U217 U218 U219 U220 U222
 U225 U226 U227 U228 U235 U236 U238 U239 U240
 U246 U328 U353 U359

Estimated Annual Quantity of Waste 15 381 Tons
 Unit Permitting Status Permitted

Unit Number 21
 Unit Name Pondcrete Storage Area Building 788
 Process Code S01
 Design Capacity 200 Cubic Yards (44 000 Gallons)
 Waste Type Low Level Mixed
 Process Total Number of Units 1

EPA Hazardous Waste Codes D002 D003 D006 D007 D008 D009 D018 D019 D028
 D029 D035 D038 D040 D043 F001 F002 F003 F005
 F006 F007 F009

Estimated Annual Quantity of Waste 11 600 Tons
 Unit Permitting Status Permitted

Unit Number 24
 Unit Name Mixed Waste Storage Building 964
 Process Code S01
 Design Capacity Maximum Capacity 123 200 Gallons
 Liquid Capacity Limit Containers found to contain free
 liquids via real time radiography may be stored in this unit.
 These containers will be stored in properly sized secondary
 containment catch basins
 Waste Type Low Level Mixed
 Process Total Number of Units 1

EPA Hazardous Waste Codes D002 D004 D006 D007 D008 D009 D010 D011 F001
 F002 F003 F005 F006 F007 F009

Estimated Annual Quantity of Waste 160 6 Tons
 Unit Permitting Status Permitted

Unit Number 35
 Unit Name Pondcrete/Saltcrete Reprocessing Facility 904 Pad
 Process Code T04
 Design Capacity 2 07 Short Tons Per Hour
 Waste Type Low Level Mixed
 Process Total Number of Units 1
 Description of T04 Process Previously processed pondcrete and saltcrete facility 904 Pad
 waste forms will be removed from triwall containers As
 required blocks will be broken with an impact hammer The
 waste will be mixed with cement, water and aggregate and
 poured into a plywood box After the mixture has cured the
 plywood boxes will be sealed

EPA Hazardous Waste Codes D002 D003 D004 D006 D007 D008 D009 D018 D019
 D028 D029 D035 D038 D040 D043 F001 F002 F003
 F005 F006 F007 F009

Estimated Annual Quantity of Waste 6 759 Tons
Unit Permitting Status Interim Status To Be Closed

Unit Number 44 (Series)
Unit Name Oil Storage Tanks Building 776
Process Code S02
Design Capacity 750 Gallons
Waste Type Low Level Mixed
Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D006 D007 D008 D018 D019 D028 D029 D035
D038 D040 D043 F001 F002 F003 F005

Estimated Annual Quantity of Waste 2 6 Tons
Unit Permitting Status Interim Status To Be Closed

Unit Number 48
Unit Name Pondcrete Solidification Process Building 788
Process Code T04
Design Capacity 13 Short Tons Per Hour
Waste Type Low Level Mixed
Process Total Number of Units 1
Description of T04 Process Two separate chemical solidification and stabilization (CSS) processes are used to clean out the solar ponds One system processes sludge solids from 207A pond and the clarifier tank while the other system processes sludge solids consolidated from the 207A and 207B Series ponds Each CSS process includes collecting and pumping the sludge to a treatment process for dewatering thickening and solidifying The solidified sludge called pondcrete is containerized in plastic lined boxes

EPA Hazardous Waste Codes D002 D003 D006 D007 D008 D009 D018 D019 D028
D029 D035 D038 D040 D043 F001 F002 F003 F005
F006 F007 F009

Estimated Annual Quantity of Waste 0
Unit Permitting Status Interim Status To Be Closed

Unit Number 49 (Series)
Unit Name Fluidized Bed Units (FBUs) Building 776
Process Code T03 T04
Design Capacity Pilot unit 0 013 Short Tons Per Hour 2 Gallons Per Hour
Production Unit 0 09 Short Tons Per Hour 10 Gallons Per Hour
Waste Type Hazardous Low Level Mixed
Process Total Number of Units 1
Description of T04 Process In Revisions 0 and 1 of the hazardous and low level mixed waste Part A applications the FBUs were classified as process T03 (incinerator) Per correspondence with CDPHE/EPA in July 1988 they have been reclassified as process code T04 (Subpart X treatment units) but may be reclassified as incinerators based on proposed changes to the definition of incinerator There are two fluidized bed units a pilot scale

unit and a production unit The units are designed to handle solid and liquid hazardous and low level mixed wastes

EPA Hazardous Waste Codes D001 F001 F003 F005 U044

Estimated Annual Quantity of Waste 0
Unit Permitting Status Interim Status To Be Closed

Unit Number 53
Unit Name Miscellaneous Cementation Buildings 371 and 771
Process Code T04
Design Capacity 0
Waste Type Low Level Mixed
Process Total Number of Units 1
Description of T04 Process To be closed under interim status

EPA Hazardous Waste Codes D004 D006 D007 D008 F001 F002 F003

Estimated Annual Quantity of Waste. 0
Unit Permitting Status Interim Status To Be Closed

Unit Number 56 (Series)
Unit Name Organic Waste Immobilization Building 774
Process Code T04 S02
Design Capacity S02 2 440 Gallons
T04 360 Gallons Per Day
Waste Type Low Level Mixed TRU Mixed Mixed Residues
Process Total Number of Units 1
Description of T04 Process Transuranic organic liquids are immobilized into a solid form Discardable lathe coolant and degreasing solvents pumped by pipeline from Buildings 707 776 and 777 machine operations are blended in a 55-gallon drum with an emulsifying agent, water Envirostone (gypsum cement) and an accelerator using a double impeller All solidified waste forms are inspected and radiographed for the presence of free liquids

EPA Hazardous Waste Codes D001 D006 D007 D008 D018 D019 D028 D029 D035 D038 D040 D043 F001 F002 F003 F005

Estimated Annual Quantity of Waste 44 Tons
Unit Permitting Status Interim Status To Be Closed

Unit Number 59
Unit Name RTR and Crate Counting Facility Building 569
Process Code S01
Design Capacity Maximum Capacity 35 140 Gallons
Liquid Capacity 1 000 Gallons
Waste Type Low Level Mixed TRU Mixed
Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D018 D019 D022 D028 D029 D035 D038 D040 D043 F001 F002 F003 F005 F006 F007 F008 F009 P011 P012 P014 P022 P028 P029 P045 P062 P076

29

P087 P098 P101 P104 P105 P106 P113 P119 P120 P121
 U002 U003 U004 U019 U031 U037 U041 U042 U044
 U055 U056 U057 U067 U071 U074 U075 U077 U079
 U080 U084 U098 U102 U107 U108 U112 U120 U121
 U122 U123 U127 U131 U133 U134 U138 U144 U148
 U151 U154 U158 U159 U161 U162 U165 U167 U169
 U170 U188 U190 U191 U196 U201 U207 U209 U210
 U211 U213 U214 U215 U216 U217 U218 U219 U220
 U225 U227 U228 U236 U239 U246 U328 U353 U359

Estimated Annual Quantity of Waste 87 Tons
 Unit Permitting Status Permitted

Unit Number 61
 Unit Name Size Reduction Vault Building 776 Room 146
 Process Code S01
 Design Capacity S01 Under interim status Unit 61 may be used for container storage but the combined capacity of Units 11 and 61 will not exceed the capacity of Unit 11
 Waste Type Low Level Mixed Waste TRU Mixed Waste Mixed Residues
 Process Total Number of Units 1
 Description of former T04 Process This facility is a supplied air room entry vault located in Building 776 Room 146 A variety of contaminated solid wastes are processed for size reduction. Large equipment is cut up using saws plasma torches etc Glovebox gloves and metals are washed in a ball mill washer Insulation and filter media are cemented and packaged in drums Contaminated drums and high efficiency particulate air (HEPA) filters are crushed Repackaging of various types of drummed and crated waste is also done Size reduced waste are packaged in wooden and metal crates and 55 gallon drums These operations generate sludge ful flo filters and liquid waste from the ball mill containing plutonium Liquid wastes are sampled and pumped to Building 374 for treatment

EPA Hazardous Waste Codes D001 D002 D004 D005 D006 D007 D008 D009 D010
 D011 D018 D019 D028 D029 D035 D038 D040 D043
 F001 F002 F003 F005 F006 F007 F008 F009 P011 P012
 P014 P015 P022 P028 P029 P045 P062 P076 P087 P098
 P101 P104 P105 P106 P113 P119 P120 P121 U002
 U003 U004 U019 U031 U037 U041 U042 U044 U055
 U056 U057 U067 U071 U074 U075 U077 U079 U080
 U084 U098 U102 U107 U108 U112 U120 U121 U122
 U123 U127 U131 U133 U134 U138 U144 U148 U151
 U154 U158 U159 U160 U161 U162 U165 U167 U169
 U170 U188 U190 U191 U196 U201 U207 U209 U210
 U211 U213 U214 U215 U216 U217 U218 U219 U220
 U225 U227 U228 U236 U239 U246 U328 U353 U359

Estimated Annual Quantity of Waste 27 Tons
 Unit Permitting Status Interim Status To Be Closed

Unit Number 74
 Unit Name Supercompaction and Repackaging Facility Building 776
 Process Code T04

Design Capacity	0 45 Short Tons Per Hour
Waste Type	Low Level Mixed TRU Mixed Mixed Residues
Process Total Number of Units	1
Description of T04 Process	This facility consists of two stages of compaction enclosed in a glovebox. Two categories of waste are processed. Soft waste (initially packaged in 55 gallon drums) is unpacked and pre compacted into 35 gallon drums. Hard waste enters the facility in 35 gallon drums. Both types of drums are supercompacted into pucks. The pucks are loaded into 55 gallon drums.
EPA Hazardous Waste Codes	D006 D007 D008 D009 D018 D019 D028 D029 D035 D038 D040 D043 F001 F002 F003 F005 NOTE D006 and D007 are only approved for low level mixed waste
Estimated Annual Quantity of Waste	191 2 Tons
Unit Permitting Status	Interim Status To Be Closed

Unit Number	371 1
Unit Name	Container Storage Area Building 371
Process Code	S01
Design Capacity	Maximum Capacity 152 373 Gallons Liquid Capacity Limit 36 972 Gallons
Waste Type	Low Level Mixed TRU Mixed Mixed Residues
Process Total Number of Units	1
EPA Hazardous Waste Codes	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D012 D015 D016 D017 D018 D019 D021 D022 D023 D023 D025 D026 D027 D028 D029 D033 D035 D036 D037 D038 D039 D040 D041 D042 D043 F001 F002 F003 F005 F006 F007 F009 F039 P011 P012 P014 P015 P022 P028 P029 P045 P062 P076 P087 P098 P101 P104 P105 P106 P113 P119 P120 P121 U002 U003 U004 U019 U031 U037 U041 U042 U044 U055 U056 U057 U067 U071 U074 U075 U077 U079 U080 U084 U098 U102 U107 U108 U112 U120 U121 U122 U123 U127 U131 U133 U134 U138 U144 U148 U151 U154 U158 U159 U161 U162 U165 U167 U169 U170 U188 U190 U191 U196 U201 U207 U209 U210 U211 U213 U214 U215 U216 U217 U218 U219 U220, U225 U227 U228 U236 U239 U246 U328 U353 U359

Estimated Annual Quantity of Waste	88 Tons
Unit Permitting Status	Permitted

Unit Number	371 3A
Unit Name	Caustic Waste Treatment System Building 371 Rooms 1103 and 1115
Process Code	T04
Design Capacity	Maximum Capacity 100 Cubic Yards Liquid Capacity Limit 100 Cubic Yards
Waste Type	Low Level Mixed TRU Mixed Mixed Residues
Process Total Number of Units	1
Description of T04 Process	A chemical precipitation process operated to reduce the

31

EPA Hazardous Waste Codes D002 D006 D008

Estimated Annual Quantity of Waste 4 Tons
Unit Permitting Status Permitted

Unit Number 374 1
Unit Name Mixed Waste Storage Area Building 374
Process Code S01
Design Capacity Maximum Capacity 50 704 Gallons
Liquid Capacity Limit 9,900 Gallons
Waste Type Low Level Mixed TRU Mixed Mixed Residues
Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D002 D003 D004 D005 D006 D007 D008 D009
D010 D011 D018 D019 D028 D029 D035 D038 D040
D043 F001 F002 F003 F005 F006 F007 F008 F009

Estimated Annual Quantity of Waste 1 000 Tons
Unit Permitting Status Permitted

Unit Number 374 2
Unit Name Process Wastewater Tanks
Process Code S02
Design Capacity 1 200 000 Gallons
Waste Type Hazardous Low Level Mixed
Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D002 D004 D005 D006 D007 D008 D009 D010
D011 D018 D019 D028 D029 D035 D038 D040 D043
F001 F002 F003 F005 F007 F008 F009

Estimated Annual Quantity of Waste 13 950 7 Tons
Unit Permitting Status Interim Status To Be Closed

Unit Number 374 3
Unit Name Process Waste Treatment Facility Building 374
Process Code S02 T01
Design Capacity S02 116 160 Gallons
T01 4,500 Gallons Per Hour
Waste Type Hazardous Low Level Mixed TRU Mixed Mixed Residues
Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D002 D004 D005 D006 D007 D008 D009 D010
D011 D018 D019 D028 D029 D035 D038 D040 D043
F001 F002 F003 F005 F007 F008 F009

Estimated Annual Quantity of Waste 68 419 Tons
Unit Permitting Status Permitted

Unit Number 428 2
Unit Name Tank Storage Area Building 428

Process Code	S02
Design Capacity	Maximum Capacity 1 960 Gallons
Waste Type	Hazardous Low Level Mixed
Process Total Number of Units	1
EPA Hazardous Waste Codes	D001 D002 D004 D005 D006 D007 D008 D009 D010 D011 D018 D019 D028 D029 D035 D038 D040 D043 F001 F002 F003 F005 F007 F008 F009
Estimated Annual Quantity of Waste	Tons
Unit Permitting Status	Interim Status To Be Closed

Unit Number	440 1
Unit Name	Container Staging and Storage Area Building 440
Process Code	S01
Design Capacity	Maximum Capacity 2 275 Cubic Yards (456,500 Gallons)
Waste Type	Liquid Capacity Limit N/A
Process Total Number of Units	Hazardous Low Level Mixed 1
EPA Hazardous Waste Codes	D001 D012 D015 D019 D021 D029 D030 D033 D035 D043 F001 F003 F005 F009 F027 P002 P005 P010-P012 P014 P016 P018 P022 P024 P027 P030 P045 P048 P050 P051 P059 P062 P063 P074 P076 P077 P087 P089 P092 P093 P098 P101 P104 P106 P108 P113 P116 P119 P120 P121 P123 U002 U004 U007 U009 U012 U018 U019 U022 U027 U028 U030 U031 U034 U036 U037 U041 U044 U047 U048 U050 U052 U053 U055 U057 U060 U061 U063 U067 U075 U077 U084 U088 U098 U101 U103 U105 U108 U112 U113 U116-U118 U120 U121 U122 U123 U127 U131 U134 U137 U138 U140 U144 U145 U147 U148 U151 U154 U159 U161 U162 U165 U166 U167 U169 U170 U173 U179 U188 U190 U191 U196 U197 U201 U202 U204 U207 U211 U213 U222 U225 U228 U235 U236 U238 U240 U246 U247 U328 U353 U359
Estimated Annual Quantity of Waste	1 000 Tons
Unit Permitting Status	Permitted

Unit Number	444 2
Unit Name	Tank Storage Area. Building 444
Process Code	S02
Design Capacity	Maximum Capacity 8 000 Gallons
Waste Type	Hazardous Low Level Mixed
Process Total Number of Units	1
EPA Hazardous Waste Codes	D001 D002 D004 D005 D006 D007 D008 D009 D010 D011 D018 D019 D028 D029 D035 D038 D040 D043 F001 F002 F003 F005 F007 F008 F009
Estimated Annual Quantity of Waste	Tons
Unit Permitting Status	Interim Status To Be Closed

33

Unit Number 444 3
Unit Name Fabric Filtration Building 444
Process Code T04
Design Capacity 2 000 Gallons Per Hour
Waste Type Hazardous Low Level Mixed
Process Total Number of Units 1

Description of T04 Process The process waste system in Building 444 utilizes fabric filters to remove solid materials from the liquid waste prior to transfer to the Building 374 waste treatment facility. The filter system consists of a draining table with a filter roll at one end. The filter unrolls automatically across the top surface of the table and accumulates in a 55 gallon container lined with a plastic bag. Process waste is pumped to the table where it gravity drains through the filter. Particulates are subsequently trapped in the filter and are disposed of as a hazardous or mixed waste along with the filter.

EPA Hazardous Waste Codes D001 D002 D004 D005 D007 D008 D018 D019 D028 D029 D035 D038 D040 D043 F001 F002 F003 F007 F009

Estimated Annual Quantity of Waste Process liquid 9 383 5 Tons Filter Solids 14 4 Tons
Unit Permitting Status Interim Status To Be Closed

Unit Number 447 3
Unit Name Fabric Filtration Building 447
Process Code T04
Design Capacity 2 000 Gallons Per Hour
Waste Type Hazardous Low Level Mixed
Process Total Number of Units 1

Description of T04 Process The process waste system in Building 447 utilizes a fabric filter to remove solid materials from the liquid waste prior to transfer to the Building 444 process waste tanks. The filter system consists of a draining table with a filter roll at one end. The filter unrolls automatically across the top surface of the table and accumulates in a 55 gallon container lined with a plastic bag. Process waste is pumped to the table where it gravity drains through the filter. Particulates are subsequently trapped in the filter and are disposed of as a hazardous or mixed waste along with the filter.

EPA Hazardous Waste Codes D001 D002 D004 D005 D007 D008 D018 D019 D028 D029 D035 D038 D040 D043 F001 F002 F003 F007 F009

Estimated Annual Quantity of Waste Process liquid 9 383 5 Tons Filter Solids 14 4 Tons
Unit Permitting Status Interim Status To Be Closed

Unit Number 559 1
Unit Name Container Storage Area Building 559

Process Code S01
Design Capacity Maximum Capacity 26 Gallons
Liquid Capacity Limit 26 Gallons
Waste Type Low Level Mixed TRU Mixed Mixed Residues
Process Total Number of Units 1
EPA Hazardous Waste Codes D002 D004 D005 D006 D007 D008 D011
Estimated Annual Quantity of Waste 14 Tons
Unit Permitting Status Permitted

Unit Number 707 1
Unit Name Container Storage Area Building 707
Process Code S01
Design Capacity Maximum Capacity 1 650 Gallons
Liquid Capacity Limit 1 650 Gallons
Waste Type Low Level Mixed TRU Mixed Mixed Residues
Process Total Number of Units 1
EPA Hazardous Waste Codes D001 D002 D003 D004 D005 D006 D007 D008 D009
D010 D011 D012 D015 D016 D017 D018 D019 D021
D022 D023 D024 D025 D026 D027 D028 D029 D033
D035 D036 D037 D038 D040 D041 D042, D043 F001
F002 F003 F005 F006 F007 F009 U227
Estimated Annual Quantity of Waste 45 Tons
Unit Permitting Status Permitted

Unit Number 707 3A
Unit Name Salt Residue Stabilization Building 707 Module A
Process Code T04
Design Capacity Maximum Capacity 75 Kilograms Per Day
Waste Type Mixed Residues
Process Total Number of Units 1
Description of T04 Process This is a thermal treatment process located in Module A of Building 707 This process is used to stabilize salt mixed residues by oxidizing reactive components
EPA Hazardous Waste Codes D003
Estimated Annual Quantity of Waste 3 0 Tons
Unit Permitting Status Permitted

Unit Number 750 1
Unit Name Mixed Waste Storage Area 750 Pad
Process Code S01
Design Capacity Maximum Capacity 10,200 Cubic Yards
Liquid Capacity Limit. 9 900 Cubic Yards
Waste Type Hazardous Low Level Mixed
Process Total Number of Units 1
EPA Hazardous Waste Codes D001 D002 D003 D004 D005 D006 D007 D008 D009

D010 D011 D018 D019 D022 D028 D029 D035 D038
 D040 D043 F001 F002 F003 F005 F006 F007 F009
 F039 P002 P003 P005 P010 P011 P012 P014 P015 P016
 P018 P022 P024 P027 P028 P029 P030 P048 P051 P059
 P074 P077 P087 P092 P093 P098 P101 P104 P105 P106
 P108 P113 P116 P119 P121 P123 U002 U003 U004
 U007 U008 U009 U012 U018 U019 U022 U025 U027
 U028 U030 U031 U034 U036 U037 U041 U042 U043
 U044 U047 U048 U050 U052 U053 U055 U056 U057
 U063 U067 U068 U069 U070 U071 U072 U073 U075
 U077 U078 U079 U080 U081 U082 U083 U084 U088
 U098 U101 U102 U103 U105 U106 U107 U108 U112
 U113 U116 U117 U118 U120 U122 U123 U125 U127
 U128 U129 U130 U131 U134 U137 U138 U140 U144
 U147 U148 U151 U154 U159 U161 U162 U165 U166
 U169 U170 U173 U179 U188 U190 U191 U196 U197
 U201 U202 U204 U207 U208 U209 U210 U211 U213
 U214 U215 U216 U217 U218 U219 U220 U222 U225
 U226 U227 U228 U235 U238 U239 U240 U328 U353
 U359

Estimated Annual Quantity of Waste 205 7 Tons
 Unit Permitting Status Permitted

Unit Number 750 2
 Unit Name Mixed Waste Storage Tanks 750 Pad
 Process Code S02
 Design Capacity Maximum Capacity 11 150 Gallons Per Tank
 Operating Capacity 10 000 Gallons Per Tank
 Waste Type Liquid Low Level Mixed
 Process Total Number of Units 1 (82 tanks)

EPA Hazardous Waste Codes D006 D007 F001 F002 F005 F006 F007 F009

Estimated Annual Quantity of Waste 50 Tons
 Unit Permitting Status Permitted

Unit Number 771 1
 Unit Name Container Storage Area Building 771
 Process Code S01
 Design Capacity Maximum Capacity 32 102 Gallons
 Liquid Capacity Limit 6 214 Gallons (23,520 Liters)
 Waste Type Low Level Mixed TRU Mixed Mixed Residues
 Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D002 D003 D004 D005 D006 D007 D008 D009
 D010 D011 D012 D015 D016 D017 D018 D019 D021
 D022 D023 D024 D025 D026 D027 D028 D029 D033
 D035 D036 D037 D038 D039 D040 D041 D042 D043
 F001 F002 F003 F005 F006 F007 F009 P011 P012 P014
 P015 P022 P028 P029 P045 P062 P076 P087 P098 P101
 P104 P105 P106 P113 P119 P120 P121 U002 U003
 U004 U019 U031 U037 U041 U042 U044 U055 U056
 U057 U067 U071 U074 U075 U077 U079 U080 U084
 U098 U102 U107 U108 U112 U120 U121 U122 U123

U127 U131 U133 U134 U138 U144 U148 U151 U154
 U158 U159 U161 U162 U165 U167 U169 U170 U188
 U190 U191 U196 U201 U207 U209 U210 U211 U213
 U214 U215 U216 U217 U218 U219 U220 U225 U227
 U228 U236 U239 U246 U328 U353 U359

Estimated Annual Quantity of Waste 269 Tons
 Unit Permitting Status Permitted

Unit Number 771 3A
 Unit Name Hydroxide Precipitation Building 771 Room 180D
 Glovebox D2
 Process Code T04
 Design Capacity Maximum Capacity 36 Liters Per Day
 Liquid Capacity Limit 36 Liters Per Day
 Waste Type TRU Mixed Mixed Residues
 Process Total Number of Units 1
 Description of T04 Process This is a chemical precipitation process located in Glovebox D2 in Room 180D of Building 771. This process is used to remove actinide material from mixed residue solutions. The process consists of adding magnesium hydroxide to a mixed residue solution which causes the formation of a precipitate. The precipitate is then removed by filtration and the filtrate is processed in a treatment unit.

EPA Hazardous Waste Codes D001 D002 D004 D006 D008 D011

Estimated Annual Quantity of Waste 0.2 Tons
 Unit Permitting Status Permitted

Unit Number 771 3B
 Unit Name Oxalate Precipitation Building 771 Room 180A Glovebox A20
 Process Code T04
 Design Capacity Maximum Capacity 36 Liters Per Day
 Liquid Capacity Limit 36 Liters Per Day
 Waste Type TRU Mixed Mixed Residues
 Process Total Number of Units 1
 Description of T04 Process This is a chemical precipitation process located in Glovebox A20 in Room 180A of Building 771. This process is used to remove actinide material from mixed residue solutions. The process consists of adding magnesium hydroxide to a mixed residue solution which causes the formation of a precipitate. The precipitate is then removed by filtration and the filtrate is processed in a treatment unit.

EPA Hazardous Waste Codes D001 D002 D004 D006 D008 D011

Estimated Annual Quantity of Waste 0.2 Tons
 Unit Permitting Status Permitted

Unit Number 774 1
 Unit Name Container Storage Area Building 774
 Process Code S01

Design Capacity Maximum Capacity 5,225 Gallons
 Liquid Capacity Limit 5,225 Gallons
 Waste Type Low Level Mixed TRU Mixed Mixed Residues
 Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D002 D004 D005 D006 D007 D008 D009 D010
 D011 D018 D019 D028 D035 D038 D040 D043 F001
 F002 F003 F005 F007 F008 F009

Estimated Annual Quantity of Waste 247 3 Tons
 Unit Permitting Status Permitted

Unit Number 774 2
 Unit Name Process Waste Storage Tanks Building 774
 Process Code S02
 Design Capacity 21 000 Gallons
 Waste Type Low Level Mixed
 Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D002 D004 D005 D007 D008 D018 D019 D028
 D029 D035 D038 D040 D043 F001 F002 F003 F009

Estimated Annual Quantity of Waste 73 5 Tons
 Unit Permitting Status Permitted

Unit Number 774 3A
 Unit Name Miscellaneous Solidification Building 774
 Process Code S01 T04
 Design Capacity S01 220 Gallons
 T04 110 Gallons Per Day
 Waste Type Low Level Mixed TRU Mixed Mixed Residues
 Process Total Number of Units 1
 Description of T04 Process

Miscellaneous liquid and solid waste that are incompatible with process equipment or the liquid waste treatment process are immobilized in a 55 gallon drum using a mixture of Portland cement and absorbent cement. All acidic wastes are neutralized before cementing. The wastes generally come from the analytical laboratories maintenance shops and research and development laboratories. The wastes commonly arrive at this treatment process packaged in 4 or 8 liter bottles overpacked in 55 gallon drums

EPA Hazardous Waste Codes D001 D002 D004 D005 D006 D007 D008 D009 D010
 D011 D018 D019 D028 D029 D035 D038 D040 D043
 F001 F002 F003 F005 F007 F008 F009

Estimated Annual Quantity of Waste 1 15 Tons
 Unit Permitting Status Permitted

Unit Number 774 3B
 Unit Name Aqueous Process Waste Treatment Building 774
 Process Code S02 T01
 Design Capacity S02 122 060 Gallons
 T01 8 000 Gallons Per Day
 Waste Type Low Level Mixed TRU Mixed Mixed Residues

Process Total Number of Units 1
Description of T04 Process Aqueous wastes are treated using chemical precipitation to remove radionuclide material

EPA Hazardous Waste Codes D001 D002 D004 D005 D006 D007 D008 D009 D010
D011 D018 D019 D028 D029 D035 D038 D040 D043
F001 F002 F003 F005 F007 F008 F009

Estimated Annual Quantity of Waste 1,254 Tons
Unit Permitting Status Permitted

Unit Number 776 1
Unit Name Container Storage Area Building 776
Process Code S01
Design Capacity Maximum Capacity 173 791 Gallons
Liquid Capacity Limit 20 075 Gallons
Waste Type Low Level Mixed TRU Mixed Mixed Residues
Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D002 D003 D004 D005 D006 D007 D008 D009
D010 D011 D018 D019 D021 D022 D023 D024 D025
D026 D027 D028 D029 D033 D035 D036 D037 D038
D039 D040 D041 D042 D043 F001 F002, F003 F005
F006 F007 F008 F009 P011 P012 P014 P015 P022 P028
P029 P030 P045 P062 P076 P087 P098 P101 P104 P105
P106 P113 P116 P119 P120 P121 U002 U003 U004
U019 U031 U037 U041 U042 U043 U044 U055 U056
U057 U067 U071 U074 U075 U077 U079 U080 U084
U098 U102 U107 U108 U112 U120 U121 U122 U123
U127 U131 U133 U134 U138 U144 U148 U151 U154
U158 U159 U160 U161 U162, U165 U167 U169 U170
U188 U190 U191 U196 U201 U204 U207 U209 U210
U211 U213 U214 U215 U216 U217 U218 U219 U220
U225 U226 U227 U228 U236 U239 U246 U328 U353
U359

Estimated Annual Quantity of Waste 523 Tons
Unit Permitting Status Permitted

Unit Number 776 2
Unit Name Tank storage area, Building 776
Process Code S02
Design Capacity Maximum Capacity 5 860 Gallons
Waste Type Hazardous Low Level Mixed TRU Mixed
Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D002 D004 D005 D006 D007 D008 D009 D010
D011 D018 D019 D028 D029 D035 D038 D040 D043
F001 F002 F003 F005 F007 F008 F009

Estimated Annual Quantity of Waste Tons
Unit Permitting Status Permitted

Unit Number 776 3
Unit Name Advanced Size Reduction Facility Building 776 Room 134

Process Code
Design Capacity
Waste Type
Process Total Number of Units
Description of T04 Process

T04
25 Cubic Yards Per Week (including hazardous debris)
Low Level Mixed TRU Mixed Mixed Residues
1

This facility is an enclosed canyon and glovebox system with dedicated heating ventilation air conditioning and exhaust systems. Contaminated solid wastes such as gloveboxes, machine tools and processing equipment, are introduced into the canyon for size reduction and steam cleaning. Size reduction is done by manual disassembly, remote disassembly and plasma arc cutting. Steam cleaning of the size reduced parts reduces contamination levels before packaging. Wastes are packaged in wooden and metal crates and 55 gallon drums.

Repackaging of various types of drummed and crated wastes is also done. The liquid from steam cleaning operations is filtered and is transferred to Unit 374 3 for treatment.

EPA Hazardous Waste Codes

D001 D002 D003 D004 D005 D006 D007 D008 D009
D010 D011 D018 D019 D028 D029 D035 D038 D039
D040 D043 F001 F002 F003 F005 F006 F007 F008
F009 P011 P012 P014 P015 P022 P028 P029 P030 P045
P062 P076 P087 P098 P101 P104 P105 P106 P113 P116
P119 P120 P121 U002 U003 U004 U019 U031 U037
U041 U042 U043 U044 U055 U056 U057 U067 U071
U074 U075 U077 U079 U080 U084 U098 U102 U107
U108 U112 U120 U121 U122 U123 U127 U131 U133
U134 U138 U144 U148 U151 U154 U158 U159 U161
U162 U165 U167 U169 U170 U188 U190 U191 U196
U201 U204 U207 U209 U210 U211 U213 U214 U215
U216 U217 U218 U219 U220 U225 U226 U227 U228
U236 U239 U246 U328 U353 U359

Estimated Annual Quantity of Waste
Unit Permitting Status

35 Tons
Permitted

Unit Number
Unit Name
Process Code
Design Capacity

777 1
Container Storage Area Building 777
S01
Maximum Capacity 26 871 Gallons
Liquid Capacity Limit 330 Gallons

Waste Type
Process Total Number of Units

TRU Mixed Mixed Residues
1

EPA Hazardous Waste Codes

D001 D002 D003 D004 D005 D006 D007 D008 D009
D010 D011 D019 F001 F002 F003 F005 F006 F007
F009 U239

Estimated Annual Quantity of Waste
Unit Permitting Status

29 Tons
Permitted

Unit Number
Unit Name
Process Code

779 1
Container Storage Area Building 779
S01

Design Capacity	Maximum Capacity 89 Gallons (337 Liters)
Waste Type	Liquid Capacity Limit 72 Gallons (273 Liters)
Process Total Number of Units	Low Level Mixed TRU Mixed Mixed Residues 1
EPA Hazardous Waste Codes	D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 F001 F002 F003 F005
Estimated Annual Quantity of Waste	14 Tons
Unit Permitting Status	Permitted

Unit Number	881 3A
Unit Name	Electrochemical Chlorination (Reactive Cyanide Treatment)
Process Code	Building 881 T04
Design Capacity	55 gallons per day
Waste Type	Hazardous Low Level Mixed
Process Total Number of Units	1
Description of T04 Process	This is an electrochemical chlorination process for the treatment of cyanide bearing plating bath solutions. The process destroys the cyanide complex in the waste solutions by generating chlorine using an electrochemical cell.
EPA Hazardous Waste Codes	D002 D003 D006 D007 D008 D011 F007 P029 P030 P031 P074 P098 P104 P106 P121
Estimated Annual Quantity of Waste	0.1 Ton
Unit Permitting Status	Permitted

Unit Number	881 3B
Unit Name	Bench scale Hazardous Waste Treatment System Building 881
Process Code	T04
Design Capacity	Up to 40 liters per day
Waste Type	Hazardous Low Level Mixed
Process Total Number of Units	1
Description of T04 Process	This is a treatment system for the treatment of hazardous excess waste chemicals. The treatment system consists of five different treatment processes: ultraviolet oxidation, hydrolysis, cementation, organic treatment, and in situ treatment.
EPA Hazardous Waste Codes	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D012 D022 D024 D025 D026 D028 D029 D035 D036 D038 D040 D041 D042 P011 P012 P014 P016 P022 P027 P028 P077 P093 P113 P116, P119 P120 P123 U002 U003 U009 U012 U018 U019 U027 U028 U031 U037 U041 U042 U044 U052 U053 U055 U056 U057 U067 U068 U069 U070 U071 U072 U077 U078 U079 U080 U081 U083 U098 U102 U103 U106 U107 U108 U112 U113 U116 U118 U120 U122 U123 U127 U131 U134 U137 U138 U144 U145 U147 U148 U151 U154 U159 U160 U161 U162 U165 U166 U169 U170 U188 U190 U191 U196 U197 U201 U204 U207 U209 U210 U211 U214 U215 U216 U217 U218 U219 U220 U221 U222 U225 U226 U228 U234 U238 U239 U240

U328 U353

Estimated Annual Quantity of Waste 0 1 Ton
Unit Permitting Status Permitted

Unit Number 887 2
Unit Name Tank storage area, Building 887
Process Code S02
Design Capacity Maximum Capacity 21 000 Gallons

Waste Type Hazardous Low Level Mixed
Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D002 D004 D005 D006 D007 D008 D009 D010
D011 D018 D019 D028 D029 D035 D038 D040 D043
F001 F002 F003 F005 F007 F008 F009

Estimated Annual Quantity of Waste Tons
Unit Permitting Status Permitted

Unit Number 993 1
Unit Name Special Material Storage Enclosure Building 993
Process Code S02
Design Capacity Maximum Capacity 106 Gallons (400 Liters)
Liquid Capacity Limit 100 Gallons (400 Liters)

Waste Type Hazardous Mixed
Process Total Number of Units 1

EPA Hazardous Waste Codes D001 D003 D012 D018 D019 D021 D022 D024-D026
D028 D029 D035 D036 D038 D040-D042 P011 P012
P014 P016 P022 P027 P028 P077 P093 P113 P116 P119
P120 P123 U002 U003 U009 U012 U018 U019 U027
U028 U031 U037 U041 U042 U044 U052 U053 U055
U056 U057 U067 U072 U077 U078 U079 U080 U081
U083 U098 U102 U103 U106 U107 U108 U112 U113
U116 U118 U120 U122 U123 U124 U131 U134 U137
U138 U144 U145 U147 U148 U151 U154 U159 U160
U161 U162 U165 U166 U169 U170 U188 U190 U191
U196 U197 U201 U204 U207 U209 U210 U211 U214
U222 U225 U226 U228 U234 U238 U239 U240 U328
U353

Estimated Annual Quantity of Waste 106 Gallons
Unit Permitting Status Permitted

ATTACHMENT 3

ITEM XV MAP

A topographic map of the Rocky Flats Environmental Technology Site and surrounding environs is not enclosed since it has been included in previous Part A applications. The map delineates the facility property boundary, streams, surface water bodies, discharge ponds, and drinking water wells within 1/4 mile of the facility.

ATTACHMENT 4

ITEM XVI FACILITY DRAWING

Facility drawings are not enclosed since they have been submitted with previous applications and permit modifications

ATTACHMENT 5

ITEM XVII PHOTOGRAPHS

Previously submitted photographs of the existing units are not enclosed since they are currently on file in the CDPHE office. The following table presents an index to the photographs.

KEY TO PHOTOGRAPHS TREATMENT AND STORAGE FACILITIES

UNIT NO.	UNIT NAME
-------------	-----------

1	Main Hazardous Waste Storage Area Building 750 Parking Lot
3	Drum Storage Area Building 444/447
4	Acid Dumpsters Building 444
6	Chip Drum Storage Area Building 447 Room 501
10	Drum Storage Area Building 561
11	Container Storage Area Building 776 Rooms 134 154 159
12	Drum Storage Area Building 776 Room 237
13	Mixed Waste Storage Building 884
14	Centralized Waste Storage Facility Building 906
15	Container Storage Area 904 Pad
17	Mixed Waste Storage Building 777 Room 432C
18 01	Remedial Action Decontamination Pad Tanks Near 904 Pad
18 02	Granular Activated Carbon Treatment Building 374
18 03	Environmental Waste Storage Unit
18 04	Environmental Waste Storage Unit
19	Mixed Waste Storage Area Building 374 Room 3813
20	Shipping Storage Area Building 664
21	Poncrete Storage Area Building 788
24	Mixed Waste Storage Building 964
25	Mixed Waste Storage Area 750 Pad
27	Mixed Waste Storage Building 776 Room 208

30 Chip Cementation Building 447
35 Pondcrete/Saltcrete Reprocessing Facility 904 Pad
38 Solar Pond Surge Tanks and Waste Treatment Facility Building 910
39 Fabnc Filtration Buildings 444 447 and 460
40(1) Process Waste Transfer and Collection System
41 Process Waste Storage Tanks Building 774
42 Process Waste Treatment Facility Building 374
43 Process Wastewater Tanks
44 Oil Storage Tanks Building 776
48 Pondcrete Solidification Process Building 788
49 Fluidized Bed Units (FBUs) Building 776
53 Miscellaneous Cementation Buildings 371 and 771
55 Aqueous Process Waste Treatment Building 774
56 Organic Waste Immobilization Building 774
57 Miscellaneous Solidification. Building 774
59 RTR and Crate Counting Facility Building 569
61 Size Reduction Vault Building 776 Room 146
62 Advanced Size Reduction Facility Building 776 Room 134
63 Container Drum Storage Area Building 371 Room 3420
73 Drum Storage Area Building 774 Room 241
74 Supercompaction and Repackaging Facility Building 776
75 TRU Waste Shredder Building 776
80 1 Reactive Cyanide Treatment Unit. Building 881
90 1 Container Storage Area Building 371 Room 3189
90 2(2) Container Storage Area Building 371 Room 3606
90 5 Container Storage Area Building 371 Room 2207
90 6 Container Storage Area Building 371 Room 3321
90 7 Container Storage Area Building 371 Room 3341
90 9 Container Storage Area Building 371 Room 3206

90 10 Container Storage Area Building 371 Room 2202
 90 11 Container Storage Area Building 371 Room 3187B
 90 16 Container Storage Area Building 371 Room 2325
 90 18 Container Storage Area Building 371 Room 3412 Glovebox es 48B and 48C
 90 20 Container Storage Area Building 371 Room 2223 and 2207
 90 23 Container Storage Area Building 771 Room 181A
 90 24 Container Storage Area Building 771 Room 182
 90 25 Container Storage Area Building 771 Annex
 90 32 Container Storage Area Building 771 Room 186
 90 37 Container Storage Area Building 779 Room 131 Gloveboxes 131A 131B 131D and
 131E
 90 39 Container Storage Area Building 779 Room 137 Gloveboxes 106 3 106-4 and 106 5
 90 43 Container Storage Area Building 779 Room 160 Glovebox 860
 90 45 Container Storage Area Building 777 Room 430 Area 3
 90 58 Container Storage Area Building 707 Room 196
 90 62 Container Storage Area Building 371 Room 3501
 90 63 Container Storage Area Building 371 Room 1210
 90 64 Container Storage Area Building 771 Room 172
 90 65(2) Container Storage Area Building 771 Room 184
 90 66 Container Storage Area Building 776 Room 127
 90 67 Container Storage Area Building 777 Room 430 Area 2
 90 68 Container Storage Area Building 777 Room 483 Area 8
 90 69 Container Storage Area Building 777 Room 208 Area 10
 90 70 Container Storage Area Building 371 Room 3602 Glovebox 1
 90 72(3) Container Storage Area Building 371 Room 3202
 90 83(2) Container Storage Area Building 771 Room 146C
 90 86(2) Container Storage Area Building 777 Room 448 NDT Vault
 90 96 Container Storage Area Building 371 Room 3204
 90 100 Container Storage Area Building 371 Stacker

90 101 Container Storage Area Building 559 Room 102 Glovebox C17

90 115 Container Storage Area Building 771 Room 163 Gloveboxes 108 109 110 112 113
114 and 115

90 116 Container Storage Area Building 771 Room 164 Gloveboxes 62 68 72 74 98 101 and
103

90 117⁽³⁾ Container Storage Area Building 771 Room 180A Gloveboxes A31 A51 A52 and A53

90 119 Container Storage Area Building 771 Room 180E Glovebox E11

90 120 Container Storage Area Building 771 Room 180F Glovebox F60

90 121 Container Storage Area Building 771 Room 180K Gloveboxes K10 and K20

90 122 Container Storage Area Building 771 Room 187 Gloveboxes 187A and 187C

90 129 Container Storage Area Building 771 Room 183

90 142 Container Storage Area Building 371 Room 3408 Gloveboxes 72B and 72C

91 001 Caustic Waste Treatment System Building 371 Room 1103

91 045 Caustic Waste Treatment System Building 371 Room 1115

93 153 Hydroxide Precipitation Building 771 Room 180D Glovebox D2

Footnotes

- (1) Process Waste Transfer and Collection System is located throughout the Plant and underground precluding the practicality of taking photographs
- (2) Photographs of these units are classified and must remain locked at the Rocky Flats Environmental Technology Site Viewing access to the photographs for cleared personnel can be obtained by contacting the facility
- (3) Photographs not available due to access restrictions to these rooms or units

ATTACHMENT 6

ITEM XVIII. CERTIFICATIONS

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and that based on my inquiry of those individuals responsible for obtaining the information I believe that the information is accurate and complete I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment

Owner and Operator Signature

Date

Keith Klein Deputy Manager
Rocky Flats Field Office U S Department of Energy

Co Operator Signature

Date

Bob Card President
Kaiser Hill Company L L C

Co Operator Signature

Date

James L McAnally President
Rocky Mountain Remediation Services L L C

Co Operator Signature

Date

Bacon President
Safe Sites of Colorado L L C

Co Operator Signature

Date

Charles Herring President
DynCorp of Colorado Inc

**RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
PART B PERMIT REAPPLICATION**

**U S DEPARTMENT OF ENERGY
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
GOLDEN, COLORADO**

FEBRUARY 10, 1997

ID NO C07890010526

Permit No 91-09 30-01

Pursuant to the Colorado Hazardous Waste Act (Title 25 Article 15 Section 101 et seq) hereafter called the Act and regulations promulgated thereunder by the Colorado Board of Health (Codified and to be codified in Title 6 of the Code of Colorado Regulations (CCR)) a State RCRA Permit is issued to the United States Department of Energy and its Prime Operating Contractor (jointly the Permittee) to operate a hazardous and radioactive mixed waste facility located in Jefferson County Colorado centered at Latitude 39o 53 30 North and Longitude 105o 11 30 West. The Permittee must comply with all the terms and conditions of this permit.

This permit consists of the conditions contained herein (including those in any attachments) and the applicable regulations contained in 6 CCR 1007 3 Parts 260 through 268 2 99 and 100 as specified in the permit. Applicable regulations are those in effect on the date of issuance of this permit. This permit is based on the assumption that the information submitted to the Hazardous Materials and Waste Management Division of the Colorado Department of Public Health and Environment (CDPHE) in the Permittee's Part A and Part B permit application dated November 28 1986 as modified by subsequent revisions dated December 15 1987 and April 13 1988 (hereafter referred to as the application) and additional information submitted to clarify previously submitted material is accurate. Any inaccuracies found in this information may be grounds for the termination or modification of this permit (see 6 CCR 1007 3 Section 100 6) and potential enforcement action. The Permittee must inform the Hazardous Materials Waste Management Division of the Colorado Department of Public Health and Environment of any deviation or changes in the application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This permit is effective thirty days after it is issued pursuant to 6 CCR 1007 3 Section 100 511 (b) and shall remain in effect until October 30 1996 (5 year duration) unless revoked and reissued, or terminated.

Signed

Howard Roitman Director
Hazardous Materials and Waste Management Division
Colorado Department of Public Health and Environment

October 28 1996

51

INTRODUCTION

This Resource Conservation and Recovery Act (RCRA) Part B Permit addresses RCRA waste management activities at the Rocky Flats Environmental Technology Site (Site). The Site is located within a security fenced area in northwestern Jefferson County between the cities of Boulder and Golden. The Site is owned and operated by the United States Department of Energy (DOE). The Kaiser Hill Company L.L.C. (K.H.) has been contracted by DOE to serve as the integrating management contractor for the Site under the direction of DOE. K.H. along with primary operating subcontractors DynCorp of Colorado Inc. (DCI) for site operations Rocky Mountain Remediation Services (RMRS) for environmental restoration, waste management, engineering construction, and decontamination and decommissioning and Safe Sites of Colorado L.L.C. (SSOC) for residue management are co-operators at the Site.

DOE, K.H., DCI, RMRS, and SSOC share responsibilities under this permit. DOE is responsible for policy, programmatic funding, and scheduling decisions, as well as general oversight. K.H., DCI, RMRS, and SSOC are responsible for day-to-day operations, including but not limited to waste analyses and handling, monitoring, record keeping, reporting, and contingency planning.

This RCRA Part B Permit authorizes the Permittees to conduct hazardous waste management activities including container storage, tank storage, and treatment in accordance with the provisions contained herein. These hazardous waste management activities are required for the storage and treatment of hazardous wastes which remain from the Site's past mission as a part of the nuclear weapons research development, and production complex administered by DOE. In addition to the backlog of hazardous waste currently stored at the Site, current and future activities including environmental restoration, hazardous waste stabilization, decontamination, and decommissioning will lead to the generation of hazardous wastes that will be governed by this Permit.

Hazardous wastes subject to this permit include hazardous waste and mixed waste (i.e., hazardous waste that contains source, byproduct, or special nuclear material subject to the Atomic Energy Act, 42 U.S.C. 2011 et seq.). The radioactive component of mixed waste is comprised of three specific classifications: low level (LL), transuranic (TRU), and residue (RES). Low-level is waste that is not spent nuclear fuel; high level waste; TRU waste; or byproduct materials with concentrations below 100 nCi/g at the time of assay. Transuranic is waste that, without regard to source or form, is contaminated with alpha-emitting transuranium radionuclides with half-lives greater than 20 years and concentrations greater than 100 nCi/g at the time of assay. Residue waste is transuranic bearing materials which historically contained sufficient quantities of plutonium to warrant reprocessing to recover plutonium.

PART I STANDARD CONDITIONS

TABLE OF CONTENTS

A	EFFECT OF PERMIT	I 1
B	PERMIT ACTIONS	I 1
C.	DEFINITIONS	I 1
D	SEVERABILITY	I 2
E	DUTIES AND REQUIREMENTS	I 2
1	Duty to Comply	I 2
2	Duty to Reapply	I 2
3	Permit Expiration	I 2
4	Need to Halt or Reduce Activity Not a Defense	I 2
5	Duty to Mitigate	I 2
6	Proper Operation and Maintenance	I 3
7	Duty to Provide Information	I 3
8	Inspection and Entry	I 3
9	Monitoring and Records	I 3
10	Reporting Planned Changes	I 4
11	Anticipated Noncompliance	I-4
12	Transfer of Permits	I 4
13	Compliance Schedules	I 5
14	Twenty four Hour Reporting	I 5
15	Other Information	I 5
F	SIGNATORY REQUIREMENTS	I 5
G	DOCUMENTS TO BE MAINTAINED AT FACILITY SITE	I 6
1	Waste analysis plan	I 6
2	Personnel training documents and records	I 6
3	Contingency plan	I 6
4	Closure plan	I 6
5	Operating record	I 6
6	Inspection schedule	I 6

PART I STANDARD CONDITIONS

A EFFECT OF PERMIT

The Permittee is allowed to store and treat hazardous or mixed waste in accordance with the conditions of this Permit. Any storage and treatment of hazardous or mixed waste not authorized in this Permit is prohibited. Interim status treatment or storage units identified in the Part A Application continue to be regulated under the interim status requirements of the Colorado Hazardous Waste Regulations 6 CCR 1007 3 Part 265 or the generator requirements 6 CCR 1007 3 Part 262.

Compliance with this permit constitutes compliance for purposes of enforcement with the Colorado Hazardous Waste Act (the Act) C.R.S. §25-15-101 et seq. Issuance of this permit does not convey property rights of any sort or any exclusive privilege nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of Federal, State, or local laws or regulations. Compliance with the terms of this permit does not automatically constitute compliance with other Federal, State, or local laws or regulations. Compliance with the terms of this permit does not constitute a bar to any order issued or any action brought under the imminent hazard provisions of the Act, Sections 3008(a), 3008(h), 3013, or Section 7003 of RCRA (42 U.S.C. §6901 et seq.), Sections 106(a), 107, 104, or 102 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. §9601 et seq., commonly known as CERCLA), or any other law providing for imminent hazard protection of public health or the environment.

B PERMIT ACTIONS

This permit may be modified, revoked, and reissued, or terminated for cause as specified in 6 CCR 1007 3 Section 100 6. The filing of a request for a permit modification, revocation, and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any permit condition.

C DEFINITIONS

For the purposes of this permit, terms used herein shall have the same meaning as those in 6 CCR 1007 3 Parts 2, 99, 100, 260, 264, 266, and 268, unless this permit specifically provides otherwise. Where terms are not defined in the regulations or the permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term. The following definitions are applicable within this permit:

Director' the Executive Director of the Colorado Department of Public Health and Environment, or his designee or authorized representative.

Division the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division.

Owner/operator' The United States Department of Energy.

Permittee the United States Department of Energy (DOE), the Kaiser Hill Company, L.L.C. (K.H.), DynCorp of Colorado, Inc. (DCI), Rocky Mountain Remediation Services, L.L.C. (RMRS), and Safe Sites of Colorado, L.L.C. (SSOC), all of whom are co-operators.

"Facility" refers, collectively to all hazardous waste management units at the Rocky Flats Environmental Technology Site that are identified in this permit.

Mixed waste refers to radioactively contaminated waste that is commingled with RCRA regulated hazardous waste or exhibits a characteristic of a RCRA regulated hazardous waste. Mixed waste includes the radioactive waste classifications of Low level Transuranic and Residue.

D SEVERABILITY

The provisions of this permit are severable and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid the application of such provision to other circumstance and the remainder of this permit shall not be affected thereby.

E DUTIES AND REQUIREMENTS

1 Duty to Comply

The Permittee shall comply with all conditions of this permit. Except to the extent and for the duration certain noncompliance is authorized by an emergency permit or other legal agreement or order authorized by the Director non-compliance constitutes a violation of the Act and is grounds for enforcement action permit termination revocation and reissuance modification, or denial of a permit renewal application.

2 Duty to Reapply

If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least 180 days before this permit expires (6 CCR 1007.3 Sections 100.11(e)(1) and 100.42(b)).

3 Permit Expiration

This permit and all conditions contained in this document will expire at the end of five years unless extended by reapplication under 6 CCR 1007.3 100.11(e) or modification under 6 CCR 1007.3 Section 100.61.

4 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5 Duty to Mitigate

In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

6 Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance adequate funding adequate operator staffing and training and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back up or auxiliary facility or similar systems only when necessary to achieve compliance with the conditions of the permit.

7 Duty to Provide Information

The Permittee shall furnish to the Director within a reasonable time any relevant information which the Director may request to determine whether cause exists for modifying revoking and reissuing or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Director upon request, copies of records required to be kept by this permit.

8 Inspection and Entry

The Permittee shall allow the Director or authorized representative upon the presentation of credentials and other documents as may be required by law to

- a Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit,
- b Have access to and copy at reasonable times any records that must be kept under the conditions of this permit,
- c Inspect at reasonable times any facilities equipment (including monitoring and control equipment) practices or operations regulated or required under this permit, and
- d Sample or monitor at reasonable times for the purposes of assuring permit compliance or as otherwise authorized by the Act any substances or parameters at any location

Access and entry to the facility are subject to personnel safety and security requirements which are subject to change. The Permittee will evaluate all requests for access and entry in light of the current requirements and notify the requesting individual(s) of any potential issues or problems affecting the requested access or entry. All efforts will be made to comply with access and entry requests. In addition, all requirements regarding the handling of unclassified controlled nuclear information restricted data and national security information including need to know requirements are applicable to any access to information or facilities covered under the provisions of this permit.

9 Monitoring and Records.

- a Samples and measurements taken for the purpose of monitoring required in support of this permit shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of 6 CCR 1007.3 Section 261 or an equivalent method from Appendix I of 6 CCR 1007.3 Section 261 or an equivalent method as described in Part VI of this permit.

Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW 846 (promulgated edition) or equivalent methods as described in Part VI of this permit.

- b The Permittee shall retain records of all monitoring information required to support this permit, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample measurement, report or application or as long as a particular waste is stored on site whichever is longer. These periods may be extended by request of the Director at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.
- c Records of monitoring information shall include
 - i the dates exact place and time of sampling or measurements
 - ii the individual(s) who performed the sampling or measurements
 - iii the date(s) analyses were performed
 - iv the individual(s) who performed the analyses
 - v the analytical techniques or methods used and
 - vi the results of such analyses

10 Reporting Planned Changes

The Permittee shall notify the Director as soon as possible of any planned physical alterations or additions to the permitted facility as specified in 6 CCR 1007.3 Section 100.42(1)(1)

11 Anticipated Noncompliance

6 CCR 1007.3 Section 100.42(1)(2) requires the Permittee to provide advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. Prior to initiating the storage, treatment or disposal of hazardous or mixed waste in a new or modified facility the Permittee is required to submit a letter to the Director stating that the facility has been constructed or modified in compliance with the permit. If within 15 days of submittal of the letter the Permittee does not receive notice from the Director of his intent to inspect the new or modified facility the Permittee may initiate storage, treatment, or disposal of hazardous or mixed waste.

12 Transfer of Permits

This permit may be transferred to a new owner/operator only if it is modified or revoked and reissued pursuant to 6 CCR 1007.3 Section 100.62. Before transferring ownership or operation of the facility during its operating life the Permittee shall notify the new owner or operator in writing of the requirements of 6 CCR 1007.3 Sections 100.264 and 266.

57

13 Compliance Schedules

The Permittee shall comply with the compliance schedules set forth in the individual parts of this permit.

14 Twenty four Hour Reporting

The Permittee shall report to the Director any noncompliance with the permit which may endanger health or the environment as defined below. Any such information shall be reported within 24 hours from the time the Permittee becomes aware of the circumstances. The report may be oral or written and shall include the following:

- a Information concerning the release of any hazardous or mixed waste that may endanger public drinking water supplies
- b Information concerning the release or discharge of any hazardous or mixed waste or of a fire or explosion at the facility which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:
 - i Name, address, and telephone number of the owner or operator
 - ii Name, address, and telephone number of the facility
 - iii Date, time, and type of incident,
 - iv Name and quantity of material(s) involved
 - v The extent of injuries, if any
 - vi An assessment of actual or potential hazard to the environment and human health outside the facility where this is applicable, and
 - vii Estimated quantity and disposition of recovered material that resulted from the incident.

A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance (including exact dates and times) and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee need not comply with the five-day written notice requirement if the Director waives the requirement and the Permittee submits a written report within fifteen days of the time the Permittee becomes aware of the circumstances.

15 Other Information

When the Permittee becomes aware that it failed to submit any relevant facts in its permit application, or submitted incorrect information in a permit application or in any report to the Division, the Permittee shall promptly submit such facts or information.

F SIGNATORY REQUIREMENTS

All reports or other information requested by the Director for compliance with this permit shall be signed by the appropriate Permittee(s) and certified as required by 6 CCR 1007.3 Sections 100.42(k) and 100.44(a).

G DOCUMENTS TO BE MAINTAINED AT FACILITY

The Permittee shall maintain at the facility until closure is completed and certified by an independent, Colorado registered professional engineer the following documents along with amendments revisions and modifications to these documents

- 1 Waste analysis plan (see 6 CCR 1007 3 Section 264 13 and this permit)
- 2 Personnel training documents and records as required by 6 CCR 1007 3 Section 264 16(d) and this permit,
- 3 Contingency plan as required by 6 CCR 1007 3 Section 264.53(a) and this permit;
- 4 Closure plan as required by 6 CCR 1007 3 Section 264 112(a) and this permit,
- 5 Operating record as required by 6 CCR 1007 3 Section 264 73 and this permit, and
- 6 Inspection schedule as required by 6 CCR 1007 3 Section 264 15(b) and this permit.

PART II GENERAL FACILITY CONDITIONS

TABLE OF CONTENTS

A	DESIGN AND OPERATION OF FACILITY	II 1
B	HAZARDOUS WASTE FROM OFF-SITE SOURCES	II 1
C	GENERAL WASTE ANALYSIS	II 1
D	SECURITY	II 1
E	GENERAL INSPECTION REQUIREMENTS	II 1
F	PERSONNEL TRAINING	II 1
G	GENERAL REQUIREMENTS FOR IGNITABLE REACTIVE OR INCOMPATIBLE WASTES	II 1
H	LOCATION STANDARDS	II 1
I	PREPAREDNESS AND PREVENTION	II 2
	1 Required Equipment	II 2
	2 Testing and Maintenance of Equipment	II 2
	3 Access to Communications or Alarm System	II 2
	4 Required Aisle Space	II 2
	5 Arrangements with Local Authorities	II 2
J	CONTINGENCY PLAN AND EMERGENCY PROCEDURES	II 2
	1 Implementation of Plan	II 3
	2 Copies of Plan	II 3
	3 Amendments to Plan	II 3
	4 Emergency Coordinator	II 3
	5 Emergency Procedures	II 3
K	MANIFEST SYSTEM	II 3
L	RECORDKEEPING AND REPORTING	II 3
	1 Operating Record	II 3
	2 Biennial Report	II 3
M	CLOSURE REQUIREMENTS	II 3
	1 Performance Standard	II 3
	2 Amendment to Closure Plan	II-4
	3 Notification of Closure	II 4
	4 Time Allowed for Closure	II-4
	5 Disposal or Decontamination of Equipment, Structures and Soils	II-4
	6 Certification of Closure	II 4
N	LAND DISPOSAL RESTRICTIONS	II-4
O	WASTE MINIMIZATION	II 4

PART II GENERAL FACILITY CONDITIONS

A DESIGN AND OPERATION OF FACILITY

6 CCR 1007 3 Section 264 31 requires the Permittee to maintain and operate the facility to minimize the possibility of a fire explosion, or any unplanned sudden or non sudden release of hazardous or mixed waste constituents to air soil or surface or ground water which could threaten human health or the environment.

B HAZARDOUS WASTE FROM OFF SITE SOURCES

The Permittee shall not receive hazardous or mixed waste from off site sources without the prior written approval of the Director

C GENERAL WASTE ANALYSIS

6 CCR 1007 3 Section 264 13 requires the Permittee to develop maintain, and follow a waste analysis plan. The Permittee will perform waste analysis in accordance with the facility waste analysis plan which is included as Part VI of this permit.

D SECURITY

6 CCR 1007 3 Section 264 14(b) requires the Permittee to implement and maintain security measures for the Site. The Permittee will implement and maintain the security measures described in Part VII of this permit. In addition, the Permittee will post the signs required by 6 CCR 1007 3 Section 264 14(c) in English only

E GENERAL INSPECTION REQUIREMENTS

6 CCR 1007 3 Section 264 15 requires the Permittee to comply with general inspection requirements. The Permittee will conduct inspections according to the requirements described in Part VII of this permit. 6 CCR 1007 3 Section 264 15(c) requires the Permittee to remedy any deterioration or malfunction discovered by an inspection. 6 CCR 1007 3 Section 264 15(d) requires the Permittee to keep inspection logs for a minimum of three years

F PERSONNEL TRAINING

6 CCR 1007 3 Section 264 16 requires the Permittee to provide training to facility personnel and maintain training documents and records. The Permittee will implement the training program described in Part IX of this permit.

G GENERAL REQUIREMENTS FOR IGNITABLE REACTIVE OR INCOMPATIBLE WASTES

6 CCR 1007 3 Section 264 17(a) requires the Permittee to comply with general requirements for ignitable reactive and incompatible wastes. The Permittee will comply with the general requirements for ignitable reactive and incompatible wastes in the manner described in Part VII of this permit.

H LOCATION STANDARDS

6 CCR 1007 3 Section 264 18(b)(1) requires the Permittee to operate maintain and close the facility in a manner that prevents washout of any hazardous waste by a 100-year flood

I PREPAREDNESS AND PREVENTION

6 CCR 1007 3 Sections 264 30 through 264 37 requires the Permittee to comply with preparedness and prevention requirements. The Permittee will address the preparedness and prevention requirements through the implementation and maintenance of the requirements identified in Part VII of this permit.

1 Required Equipment

6 CCR 1007 3 Section 264 32 requires the Permittee to at a minimum equip the facility with the emergency equipment identified in Part VII of this permit. The Permittee will equip the facility with the emergency equipment identified in Part VII of this permit.

2 Testing and Maintenance of Equipment

6 CCR 1007 3 Section 264 33 requires the Permittee to test and maintain required equipment. The Permittee will test and maintain required equipment as described in Part VII of this permit.

3 Access to Communications or Alarm System

6 CCR 1007 3 Section 264 34 requires the Permittee to maintain access to communication and alarm systems. The Permittee will provide immediate access to internal alarm or emergency communication devices to personnel involved in hazardous waste handling operations as described in Part VII of this permit.

4 Required Aisle Space

6 CCR 1007 3 Section 264 35 requires the Permittee to maintain aisle space to allow the unobstructed movement of personnel fire protection equipment, spill control equipment and decontamination equipment in an emergency to any area of the facility subject to this permit. The Permittee will comply with the unit specific aisle space requirements identified in Parts III IV and V for container storage, tank storage and treatment units respectively.

5 Arrangements with Local Authorities.

- a 6 CCR 1007 3 Section 264 37(a)(1) and (2) requires the Permittee to attempt to obtain arrangements with local fire and police departments and familiarize these agencies with the layout of the facility and properties of the hazardous and mixed wastes handled on site and their associated hazards. The Permittee will specify (as applicable) each agency's assigned tasks when responding to emergency situations. 6 CCR 1007 3 Section 264 31(b) requires the Permittee to document any refusal by state or local officials to enter into these preparedness and prevention arrangements in the operating record. Documentation of the arrangements which have been made are available at the Site.
- b 6 CCR 1007 3 Section 264 37(a)(4) requires the Permittee to make arrangements with a local hospital to familiarize the hospital with the properties of hazardous and mixed wastes handled at the facility. The Permittee is also required to establish a written agreement with the hospital outlining their responsibilities should emergency medical services be required. Documentation of the agreement with local hospitals is contained in Part VIII Contingency Plan, of this Permit.

J CONTINGENCY PLAN AND EMERGENCY PROCEDURES

6 CCR 1007 3 Sections 264.50 through 264 56 requires the Permittee to comply with contingency plan and emergency procedure requirements which include the following

62

1 Implementation of Plan

6 CCR 1007 3 Section 264 51 requires the Permittee to immediately carry out the provisions of the facility RCRA contingency plan based on the conditions presented in the plan.

2 Copies of Plan

6 CCR 1007 3 Section 264 53 requires the Permittee to maintain a copy of the facility RCRA contingency plan at the facility and submit copies to all local police departments fire departments hospitals and local emergency response teams that may be called upon to provide emergency services

3 Amendments to Plan

6 CCR 1007 3 Section 264 54 requires the Permittee to review and immediately amend as it becomes necessary the facility RCRA contingency plan.

4 Emergency Coordinator

6 CCR 1007 3 Section 264 55 requires the Permittee to ensure that a trained emergency coordinator is available at all times in case of an emergency

5 Emergency Procedures

6 CCR 1007 3 Section 264 56 requires the Permittee to comply with emergency procedure requirements

When applicable the Permittee will follow the facility RCRA contingency plan which is included as Part VIII of this permit.

K MANIFEST SYSTEM

6 CCR 1007 3 Sections 264 71 264 72 and 264 76 requires the Permittee to comply with applicable manifest requirements Site procedures are used to comply with these requirements

L RECORDKEEPING AND REPORTING

1 Operating Record

6 CCR 1007 3 Section 264 73 requires the Permittee to maintain a written operating record at the facility A procedure at the Site identifies what information is included in the facility operating record

2 Biennial Report

6 CCR 1007 3 Section 264 75 requires the Permittee to comply with the biennial report requirements This requirement will be met by the Permittee

M CLOSURE REQUIREMENTS

1 Performance Standard

6 CCR 1007 3 Sections 264 111 264 178 264 197 and 264 601 through 264 603 requires the Permittee to close the facility in accordance with the closure plan presented in Part X of this Permit.

2 Amendment to Closure Plan

6 CCR 1007 3 Section 264 112(c) requires the Permittee to amend the closure plan whenever necessary. Amendment of the facility closure plan will be accomplished in accordance with Part X of this Permit.

3 Notification of Closure

6 CCR 1007 3 Section 264 112(d)(1) requires the Permittee to notify the Director at least 45 days prior to the date the Permittee expects to begin closure of permitted units. Proper notification will be provided in accordance with Part X of this Permit.

4 Time Allowed for Closure

6 CCR 1007 3 Section 264 113 requires that the Permittee after receiving the final volume of hazardous waste, treat or remove from the site all hazardous or mixed waste from permitted waste management units. The schedule provided in Part X of this Permit specifies applicable time periods for the closure of individual units.

5 Disposal or Decontamination of Equipment Structures, and Soils

6 CCR 1007 3 Section 264 114 requires the Permittee to decontaminate and/or dispose of all contaminated equipment, structures and soils. The Permittee will implement this requirement in accordance with Part X of this permit.

6 Certification of Closure.

6 CCR 1007 3 Section 264 115 requires the Permittee to submit a certification that the facility has been closed within 60 days after completion of final closure. The Permittee will implement this requirement in accordance with the specifications in Part X of this permit.

N LAND DISPOSAL RESTRICTIONS

6 CCR 1007 3 Part 268 requires the Permittee to comply with the Land Disposal Restriction requirements.

O WASTE MINIMIZATION

6 CCR 1007 3 Section 264 73 (b)(9) requires the Permittee to maintain a program to reduce the volume/quantity and toxicity of hazardous waste generated by the Permittee to the degree determined by the Permittee to be economically practicable and to use practicable treatment storage or disposal methods currently available to the Permittee which minimize the present and future threat to human health and the environment. In addition, the Permittee is required to certify annually in the operating record that these waste minimization practices are being implemented at the facility.

64

PART III CONTAINER STORAGE UNITS

TABLE OF CONTENTS

A INTRODUCTION	III 1
B CONTAINER STORAGE UNITS STANDARD CONDITIONS	III 1
1 Types of Container Storage Units	III 1
2 Types of Container Storage Areas	III 1
3 Storage Limits	III 2
4 Warning Signs	III 3
5 Storage of Ignitable and Reactive Wastes	III 3
6 Precautions to Prevent Reactions	III 4
7 Inspection Method	III-4
8 Types of Storage Containers	III 5
9 Container Labels	III 5
10 Condition of Containers	III 5
11 Compatibility with the Container	III 6
12 Compatibility with Other Wastes	III-6
13 Container Spacing	III 6
14 Stacking	III 7
15 Secondary Containment	III 8
16 Recordkeeping	III 9
17 Special Provisions for Container Staging Areas	III 10
18 Incidental Waste Management Activities	III 10
19 Addition of New Container Storage Areas Within a Container Storage Unit	III 10
20 P and U Listed Waste Management	III 11
C CONTAINER STORAGE UNITS UNIT SPECIFIC CONDITIONS	III 11
1 Unit 1	III 12
2 Unit 10	III 14
3 Unit 13	III 15
4 Unit 14	III 16
5 Unit 15 A	III 17
6 Unit 15 B	III 18
7 Unit 18 03	III 19
8 Unit 18 04	III 20
9 Unit 20	III 22
10 Unit 21	III 23
11 Unit 24	III 24
12 Unit 59	III 25
13 Unit 371 1	III 26
14 Unit 374 1	III 32
15 Unit 440 1	III 33
16 Unit 559 1	III 34
17 Unit 707 1	III 35
18 Unit 750 1	III 36

19 Unit 771 1	III 37
20 Unit 774 1	III 42
21 Unit 776 1	III 43
22 Unit 777 1	III-45
23 Unit 779 1	III-48
24 Unit 993 1	III 50

III n

February 6 1997

66

PART III CONTAINER STORAGE UNITS

A INTRODUCTION

Part III of the permit establishes specific conditions for storage in container storage units. Section B of Part III contains standard conditions for container storage units while Section C contains unit specific conditions.

Each container storage unit in this permit is provided with a maximum expected waste capacity and a list of EPA waste codes which may be stored in the unit. Separate storage areas may exist within container storage units and may utilize a portion or all of the maximum waste capacity and any of the approved EPA waste codes for the unit. Specific waste codes and capacities for storage areas within a storage unit are identified in Part III C. Typically the waste codes for specific types of waste storage areas within a waste storage unit (e.g. glovebox, room, vault) will be the same to allow for maximum usage of existing storage capabilities.

Waste capacities and specific waste codes are based on the physical characteristics of the container storage area. Specific container storage areas which exist within container storage units are identified in Part III C. Container Storage Units Unit Specific Conditions. Container storage units may include the following: 1) units within buildings consisting of single or multiple areas or 2) single locations which function solely as container storage units.

B CONTAINER STORAGE UNITS STANDARD CONDITIONS

1 Types of Container Storage Units

A container storage unit may consist of single or multiple container storage areas. A container storage unit may be any of the following types:

- a Building The container storage unit is the building. The walls, roof, and floor of the area of the building within which the unit is located will be maintained in a structurally sound condition.
- b Designated Area A container storage unit comprised of separate physical structures which could be cargo containers, tents, or other structures which are grouped together in a single area.

2 Types of Container Storage Areas

Container storage areas are individual locations within a container storage unit where containers are physically stored. There may be one or more of the same or different types of container storage areas within a container storage unit. Container storage areas may be of any of the following types:

- a Room The area is located in a room within a building. The ceiling, floor, and walls surrounding the area will be kept in good condition.

Specific rooms used as storage areas within a unit are identified in Section C of this part. Container Storage Units Unit Specific Conditions. In some cases, the entire room will be used for storage while in others only a portion of the room will be used.

In these instances the portion of the room used for container storage will be delineated with striping painted on the floor or by another means intended to clearly identify the perimeter boundaries of the area. More specific information regarding the actual portion of rooms used for container storage will be maintained in the operating record for the unit.

- b Cargo container The area will be physically defined by a cargo container typically made of aluminum or steel. Cargo containers typically range in size from 20 feet long x 8 feet wide x 8 feet high to 40 feet long x 12 feet wide x 8 feet 8 inches high. Multiple compartment cargo containers (typically 3 compartments) are normally 24 feet long x 8 feet wide x 8 feet high. Each cargo container will be fitted with an electrical ground and air ventilators. Each cargo container will be maintained in good condition.
- c Fenced area The area will be physically defined by a fence around the outside perimeter of the area. The perimeter fence will be kept in good condition free of holes and gaps.
- d Tent The area is physically defined by a tent structure which is used to provide protection from the weather for the stored wastes. The tent ceiling will be maintained in good condition. In some cases wastes may be stored around the outside perimeter of the tent structures.
- e Glovebox Gloveboxes are typically constructed of steel and are used to store small containers. Gloveboxes are located inside of buildings and are maintained under a vacuum (typically 0.25 inches of water). Gloveboxes will be maintained in good condition.
- f Vault A vault is a type of room within a building which is typically used for the storage of numerous small containers of highly radioactive mixed waste. Vaults are equipped with additional security features to prevent and detect unauthorized personnel access. The vault ceiling, floor, and walls will be maintained in good condition.
- g Special Material Storage Enclosure The unit will be physically defined by the enclosure. The enclosure will be regularly maintained and kept in good condition.

Building personnel are required to comply with the operational safety and surveillance requirements for each storage unit or area in accordance with the building's authorization basis. The authorization basis may consist of any of the following: Facility Safety Analysis Report (FSAR), Operational Safety Requirements (OSRs), Limiting Condition of Operation (LCO), Justification for Continued Operation (JCO), Basis for Interim Operation (BIO), or Basis for Operation (BFO). The authorization basis includes surveillance requirements to maintain negative pressure and exhaust system requirements for each glovebox, HEPA filtration systems, glove changes, and the glovebox overheat system, as applicable.

3 Storage Limits

- a Container storage units There are two applicable storage limits for a container storage unit.
 - 1 Maximum storage limit The total combined volume of liquid and solid waste which may be stored within the unit.

- b Container storage areas Storage limits for each container storage area will be all or a portion of the approved maximum storage limit for the container storage unit within which the area is located The actual amount of hazardous or mixed waste which may be present within a storage area will be determined by one or more of the following limitations or controls

- i Authorization basis All ongoing and proposed activities in facilities at the Site are subject to review when changes in operations occur that were not included in the initial or most recent review As a part of this review hazards assessments and evaluations of the amount and configuration of mixed wastes being managed are conducted Hazards assessments and associated accident analyses conducted on all activities that involve hazardous wastes identify controls and limits necessary to ensure safe storage or operations and result in an authorization basis for the activities within the facility

These assessments may also affect the amount and configuration of mixed waste which may be stored in a respective container storage area Any limitations or conditions identified as a part of these assessments for the storage of mixed waste must be followed

- ii Secondary containment capacity In order for liquid wastes to be stored within an area the capacity of the secondary containment must be evaluated to determine its adequacy for containment of the waste volume to be stored
- iii Physical space For areas which are not subject to the aforementioned limitations the storage limit may be based on the physical space available in the area Considerations affecting the amount of available storage capacity would include maintenance of aisle space building structural feature location and design considerations and the location of facility safety equipment

Information concerning storage limitations for individual container storage areas will be maintained in the operating record for the unit and in the unit descriptions in Part III C

4 Warning Signs

All container storage units will have signs containing the warning Danger Unauthorized Personnel Keep Out (or equivalent) conspicuously posted at intervals around the perimeter of the unit or at each approach or entrance to a container storage unit. The signs will be in English The Permittee will post No Smoking signs at units where ignitable or reactive wastes are stored or treated

5 Storage of Ignitable and Reactive Wastes

The Permittee will separate and protect ignitable or reactive waste from sources of ignition or reaction The Permittee will locate containers storing ignitable or reactive waste at least 15 meters (or approximately 50) feet inside the facility property line. The Permittee will prohibit smoking and open flames where ignitable or reactive waste is being handled

6 Precautions to Prevent Reactions

The Permittee shall take precautions to prevent

- a Accidental ignition or reaction of ignitable or reactive wastes by following the procedures specified in Part VII of this permit,
- b Reactions that generate extreme heat or pressure fires or explosions or violent reactions
- c Reactions that produce uncontrolled toxic or flammable fumes dusts or gases in sufficient quantities to threaten human health and the environment,
- d Reactions that cause damage to the structural integrity of the container or facility and
- e Any other reactions that could threaten human health or the environment through other means

7 Inspection Method

At least weekly or as specified in the unit specific conditions in Part III C the Permittee will inspect all container storage units where hazardous and mixed waste containers are stored. The container storage units will be inspected to identify leaks significant container deterioration or corrosion, and deterioration of secondary containment systems that would allow the migration of contaminants to the environment. Inspections will be conducted by one of the following methods or an alternate method approved by the Director

- a Visual The inspection will be conducted by physically entering the storage unit and visually inspecting the unit and the containers
- b Remote radiation monitoring To minimize personnel exposure and to enhance efficiency inspections may be conducted for certain units by evaluating the results of continuous remote monitoring within the units so equipped rather than by physically entering the unit. Remote radiation monitoring equipment may include Selective Alpha Air Monitors (SAAMs) as a primary means of leak detection and fixed air samplers as a secondary means of leak detection.

SAAMs are stationary air monitoring units which operate continually drawing ambient air through a filter and providing a continuous count of the alpha activity collected. The SAAMs are equipped with recording and alarming capability. Fixed air samplers serve as airborne particulate filters which continuously gather samples from fixed locations in buildings. The filters are collected at specified intervals and evaluated for airborne radioactive contaminants. The SAAMs and the fixed air head samplers are maintained and inspected to ensure they are operating properly. Both of these devices are used to detect airborne radioactive releases which may indicate a containment breach in the area served by the device.

During the weekly inspection the inspectors will indicate in the comments section of the inspection form if any SAAM alarm activations from actual hazardous waste releases have occurred since the last inspection. In the event a release of hazardous waste has occurred the inspectors will notify their supervisor or on site emergency response personnel in accordance with Part VIII Contingency Plan of this permit.

- c Remote visual surveillance Another alternative inspection method to minimize personnel exposure and to enhance efficiency includes the inspection of certain areas by remote visual surveillance on a monthly basis Container storage areas subject to this type of inspection will be specifically identified in Part III C Container Storage Units Unit Specific Conditions

A camera will be used to look for evidence of leaks or spills from the stored containers and to examine the floor and walls for signs of significant deterioration.

In addition an annual inspection will be conducted on a statistical population of the containers within areas subject to remote visual surveillance to assess container condition This includes the random selection of a percentage of the containers stored within the area which are then physically evaluated to determine their condition The randomly selected containers are considered representative of all of the containers in storage in the unit and serve to identify any problems as they develop while still protecting the worker from unnecessary exposure

8 Types of Storage Containers

Hazardous and mixed waste may be stored in approximately 1 2 3 or 4 liter (or smaller) cans or glass or plastic bottles 5 10- 30- 35 or 55 gallon drums crates boxes gas cylinders or other Site authorized containers

9 Container Labels

All containers of hazardous or mixed waste in storage will be labeled with the words Hazardous Waste an accumulation start date and the compatibility code The hazardous waste label must be able to be seen from within the container storage area for inspections

Containers with deteriorating hazardous waste labels which have become illegible will be relabeled within 3 months of discovery of the label illegibility or prior to being handled whichever is sooner For a container holding 10 gallons or less the hazardous waste label may be affixed to the container's holder shielding or glovebox However each outer container (the individual container or the outer container for labpacks or multi package containers) must be labeled upon removal from the unit In lieu of each container being labeled a single hazardous waste label for all containers may be posted at each entrance to container storage units or areas in which containers of pondcrete saltcrete pond sludge, or vacuum filter sludge are stored This applies only to the containers storing these waste types and does not exempt the Permittee from labeling containers of other wastes in the unit appropriately

10 Condition of Containers

- a Containers of hazardous and mixed waste will be maintained in good condition If a container is not in good condition (e.g. has severe rusting apparent structural defects compromising the integrity of the container or begins to leak) the Permittee will place the container in a pan or overpack or otherwise isolate the container The Permittee will then transfer the waste to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this Permit.

- b Containers of hazardous and mixed waste will be closed during storage except when it is necessary to add or remove waste or when necessary to prevent other hazards. Containers in gloveboxes storing waste subject to pressure build up may be stored with the caps loosely in place.
- c Containers storing hazardous or mixed wastes that are prone to expansion or freezing which could damage or degrade the integrity of the container will be stored in an area designed to maintain the temperature above freezing such as a heated cargo container or within a heated building.

Additionally containers storing waste that are prone to pressure build up that could damage or degrade the integrity of the container will be stored in areas where the temperature can be maintained at acceptable levels or will have vented lids.
- d Hazardous or mixed waste containers stored outside will be covered to protect them from the elements.
- e Each gas cylinder storing hazardous waste will be secured to prevent toppling such as by being chained to a wall of the area structure or secured within a rack which is secured to the wall.
- f Containers of hazardous or mixed waste will not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

11 Compatibility with the Container

- a All containers used to store hazardous or mixed waste will be made of or lined with material that is compatible with the waste being stored so that the ability of the containers to hold the waste is not impaired.
- b The Permittee will not place hazardous or mixed waste in an unlined container that previously held an incompatible waste or material.

12 Compatibility with Other Wastes

Incompatible liquid hazardous or mixed wastes stored within a unit will be separated by a berm, wall, catch pan, or other physical barrier that is adequate to prevent commingling of incompatible waste. Incompatible solid hazardous or mixed wastes stored within a unit will be separated by a distance of at least 10 feet, unless separated by a berm, wall, catch pan, or other physical barrier. Incompatible wastes will not be placed within the same container. Each crate storing hazardous or mixed waste will be labeled with the applicable compatibility code.

13 Container Spacing

The Permittee will maintain container spacing in accordance with the following as applicable:

- a Standard A minimum 26 inch aisle will be maintained between double rows of containers of hazardous or mixed waste. The 26 inch minimum aisle width is predicated on standard 55 gallon drums and movement with a hand cart. If larger containers or handling equipment are used, aisles sufficient to accommodate movement of the containers must be maintained.

containers or handling equipment are used aisles sufficient to accommodate movement of the containers must be maintained

For safety equipment and building structures requiring access space clearance will be maintained as necessary

Containers stored against a wall or other barrier will be stored so that each container can be inspected

In units where containers are stacked an aisle sufficient to allow forklift access within each room or to the front of each row of containers will be maintained (typically 8 to 10 feet)

- b Vault storage For storage of hazardous or mixed waste containers on the floors of vaults a minimum 26 inch entrance aisle shall be maintained Secondary aisles shall be spaced so that no more than two containers need to be moved to reach a container

For shelf storage in vaults spacing between hazardous or mixed waste containers is dictated by fixed shelf storage locations or must be sufficient to allow for the inspection of each container

- c Shelves For shelf storage (typically in flammable material storage cabinets within container storage units) hazardous or mixed waste container spacing must be sufficient to allow for the inspection of each container
- d Gloveboxes Mixed waste containers stored in gloveboxes shall be provided with sufficient spacing to allow for inspection of each container A minimum 26 inch aisle will be maintained outside the glovebox in front of the window used for inspection or glovebox operation to allow for access to the glovebox

Diagrams depicting typical container arrangements for each of the permitted container storage units and areas within the units are included with the unit information sheets in Part III C

14 Stacking

The Permittee may store and stack hazardous or mixed waste containers in one or more of the following arrangements

- a Planar In this arrangement, containers will not be stacked
- b Crate stacking Full size crates (typically 4 feet high x 4 feet wide x 8 feet long) will be stacked no more than four high Half size crates (typically 2 feet high x 4 feet wide x 8 feet long) will be stacked no more than five high In combination stacked crates will not exceed 18 feet in height.
- c Drum stacking Drums may be stacked no more than four high Drums may be stacked on pallets plywood or within pans In order to minimize hazards during stacking and storage activities containers stacked on pallets will be banded together An exception exists for Unit 776 1 Rooms 134, 154 and 159 drums may be stacked no more than two high

In some units a 5 or 10-gallon container may be stacked on the top of each 55 or 85 gallon container provided the 55 or 85 gallon container is blocked to prevent

inadvertent movement and the 5 or 10-gallon container is placed on blocks to elevate it above the top of the 55 or 85 gallon drum

- d Racks Drums stored in racks will be stored horizontally and will be stacked no more than three high. The total weight of the drums stored in a rack will not exceed the structural design capacity of the rack
- e Shelves Containers on shelves will be stored in a planar configuration, fixed positions or stacked in an array similar to the typical arrangement provided at the end of this section

15 Secondary Containment

Liquid hazardous or mixed wastes will be stored in areas providing secondary containment.

Except for storage within gloveboxes, containers storing liquids within a secondary containment area without a slope to remove liquids will be elevated off the floor in a stable manner and the containers will not extend onto or over the edge of any berms which are present.

Liquids accumulated within secondary containment areas will be removed in a timely manner using the appropriate means necessary. The collected liquids will be transferred to a container of adequate integrity and managed appropriately based on the waste characterization.

Secondary containment will be adequate to contain at least 10% of the volume of the liquid hazardous or mixed waste containers stored in the area or the volume of the largest container, whichever is greater. For hazardous or mixed waste containers with known volumes of incidental free liquid, secondary containment will be provided based on the actual amount of incidental free liquid present within the container(s) located within the secondary containment structure. Incidental free liquid is defined as small amounts of liquid resulting from condensation within the waste container or liquid which was entrained in the waste matrix when packaged but has since separated from it. Secondary containment will be provided by one of the following types:

- a Coated concrete The area will be surrounded by a berm or wall which meets the minimum berm height necessary to provide adequate secondary containment. The concrete will be coated with epoxy or other coating offering similar protection. The coating will cover the entire floor and berm or wall up to the minimum necessary berm height. The floor and berm or wall of concrete secondary containment areas will be maintained in good condition free of cracks and gaps that could impair its effectiveness as containment and allow the migration of contaminants to the environment.
- b Stainless steel Secondary containment is provided by stainless steel which is maintained in good condition free of cracks and gaps that could impair the effectiveness of the containment and allow the migration of contaminants to the environment. The secondary containment will surround the storage area and meet or exceed the minimum required berm height necessary to provide adequate secondary containment.
- c Catch basins Catch basins providing secondary containment for liquids will be constructed of metal, high density polyethylene (HDPE), fiberglass, stainless steel or other materials compatible with the wastes being stored and maintained in good condition free of cracks and gaps that could impair their effectiveness as containment.

and allow the migration of contaminants to the environment.

Catch basins constructed of material other than HDPE fiberglass or stainless steel will be coated with epoxy or other coating providing equivalent protection.

Each catch basin will have an integral berm of sufficient height to contain 10% of the volume of the containers stored in the catch basin or the volume of the largest container whichever is greater. For hazardous waste containers with known volumes of incidental liquid the minimum berm height will be based on the actual amount of incidental liquid present within the container(s) located within the secondary containment structure.

- d **Gloveboxes** Gloveboxes will be maintained in good condition free of cracks and gaps that could impair their effectiveness as containment and allow the migration of contaminants to the environment. Gloveboxes used for secondary containment that have a criticality prevention drain must be capable of containing 100% of the hazardous or mixed liquid waste being stored within it without overtopping the criticality drain within the glovebox.

A criticality prevention drain consists of compatible piping typically 2 inch in diameter connected through the floor of a glovebox to prevent spilled solutions from accumulating to a volume or depth within the glovebox (critical mass) that could initiate a nuclear fission reaction. Criticality prevention drains typically extend to a height of one inch inside the glovebox and will allow accumulated liquids in excess of this depth to drain to the floor of the room or to a tank.

- e **Bermed asphalt** An asphalt pad underlying the container storage unit/area serves as secondary containment. Berms shall surround the unit/area and must be sealed to the asphalt. The berms must be 4 inches in height at likely spill collection areas and 2 inches in height at all other locations. Bermed asphalt is acceptable containment for units/areas managing only saltcrete, pondcrete, and associated waste forms.

An exception to the abovementioned condition exists for Unit 776 1, Room 208, where secondary containment is provided by an angle iron sealed to the floor and coated with epoxy paint.

16 Recordkeeping

The Permittee will place the results of all waste analyses, waste determinations, waste compatibility analyses, and ignitable and reactive waste handling compliance documentation in the facility operating record. Specific recordkeeping requirements are identified in the following:

- a Completed inspection forms/logs will be maintained in the inspection log for the unit.
- b The operating record will specify each hazardous or mixed waste container within the unit. The location of each container within the unit will also be present in a locator system to allow for locating the container in a timely manner to minimize unnecessary exposure to personnel. There are no specific requirements for the format or content of the locator system other than it be capable of providing sufficient information to determine the location of individual containers in a reasonable amount of time. In addition, general information concerning the unit (i.e., storage areas within the unit, description(s) of the area, approved waste codes, and any area specific information) will be present.

17 Special Provisions for Container Staging Areas

For the purposes of this permit a staging area is recognized as an area within a container storage unit/area in which containers are placed for a short period of time (typically 15 to 30 days) while being prepared for or awaiting transfer while being received while awaiting sampling analysis and/or analytical results or while awaiting nuclear or safety related activities such as drum venting While in the staging area container configurations may not mirror those depicted in the typical container layouts for the unit/area in Part III C Staging areas and containers temporarily located within them are subject to the following requirements

- a Staged containers may be grouped together in arrays of up to four containers wide by twenty containers long Staged containers placed along walls in a unit/area shall not exceed two containers wide
- b Staged containers shall be placed with sufficient space between double rows of containers (typically 4 to 6 inches) to identify any leaks or releases which may occur while the containers are in the staging area
A minimum 26 inch aisle will be maintained around groups of containers located within a staging area
- c Staged containers will be identified by a roped area a painted boundary on the floor of the area or other physical means to identify the status of the containers
- d Staged containers will be subject to locator system requirements if staged for more than 30 days Otherwise the locator system need not be maintained for containers while in a staging area
- e Containers located within staging areas must not impede the ability of facility personnel to respond to incidents among the stored containers that are not a part of the staging area

18 Incidental Waste Management Activities

In any permitted container storage unit the Permittee may add absorbent materials to waste containers without active mixing for the sole purpose of removing incidental free liquids Precautions will be taken to ensure no releases occur during this activity Absorbent materials may only be added to the following waste types combustibles plastic insulation, sludge filter socks blacktop concrete soil and spill clean up materials such as wipes booms and used absorbent In addition manual compaction of soft waste and crushing of fluorescent light tubes is allowed in certain container storage units Container storage units in which manual compaction and fluorescent light tube crushing occur are identified in the special unit conditions at the end of this section In all cases incidental waste management activities in container storage units will be conducted in accordance with approved process specific procedures

19 Addition of New Container Storage Areas Within a Container Storage Unit

In the event the Permittee identifies the need for a new container storage area within an existing container storage unit approval for the new area may be gained via the following The Permittee shall evaluate the storage capabilities of the proposed area in accordance with Part III B

Once the proposed area has been determined to be acceptable for container storage the Permittee shall submit a letter to the Director identifying the proposed new area. The letter shall contain the following: a typical container layout diagram consistent with those present in Part III C revised unit information sheets; the proposed capacity of the new area; and any limitations on the storage of wastes in the area. Prior to introducing any wastes into the new area the Director must provide written approval.

This method of new area addition will only be possible if the addition of the new area can be accomplished under the current maximum unit capacity. If the maximum unit capacity will be exceeded the Permittee will submit a permit modification in accordance with 6 CCR 1007.3 Part 100.63 and Part 100 Appendix I.

20 P and U listed Waste Management

The Permittee is authorized to store the specific P and U listed wastes currently identified at the Site. If in the future heretofore unidentified P and/or U listed wastes are discovered and require storage the Permittee will submit a letter to the Director identifying the newly discovered waste, the waste management practices that will be instituted based on waste specific issues, and the location for storage of the waste. Prior to placing the waste into storage the Director must provide written approval for the storage of the waste.

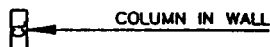
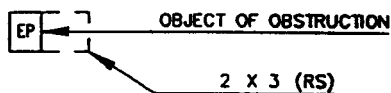
C CONTAINER STORAGE UNITS UNIT SPECIFIC CONDITIONS

The Permittee may store hazardous wastes in container storage units subject to the general terms of this permit and the specific conditions as follows. A typical container configuration diagram for each of the units and areas within the units are provided following the unit information sheet(s) for the unit. Container configurations present within the areas may differ slightly from the typical container configurations provided in this section due to normal short duration activities within the unit. If area specific conditions or other individual unit aspects mandate a storage configuration that differs significantly from the diagram of the unit in this section, a revised drawing will be submitted to the Division to replace the incorrect version. Maximum capacities are provided in gallons for units which are used for the storage of both liquids and solids in drums or drum type containers. In units where solid wastes are stored in crates the capacity is also provided in cubic yards. Finally in units where wastes are stored within gloveboxes liters is also provided as a unit of measure.

77

LEGEND & ABBREVIATIONS

TYPICAL SYMBOLS



CONTAINERS



ABBREVIATIONS

AC	AIR CONDITIONING UNIT
BA	BREATHING APPARATUS
C	CALORIMETER
CA	CABINET
CL	COLUMN
CP	CONTROL PANEL
DT	DUCT
EP	ELECTRICAL PANEL
EQ	EQUIPMENT
EW	EYE WASH
FB	FIRE BLANKET
FE	FIRE EXTINGUISHER
FH	FIRE HOSE
FN	FURNITURE
FP	FIRE PHONE
GA	GAMMA ALARM
GB	GLOVEBOX
LD	LADDER
PD	PEDESTAL
PL	PLENUM
PP	PIPING
RS	RESTRICTED SPACE
SA	SAAM
SH	SHIELDING
SP	SUMP
SS	SAFETY SHOWER
TK	TANK
TP	TELEPHONE
TYP	TYPICAL

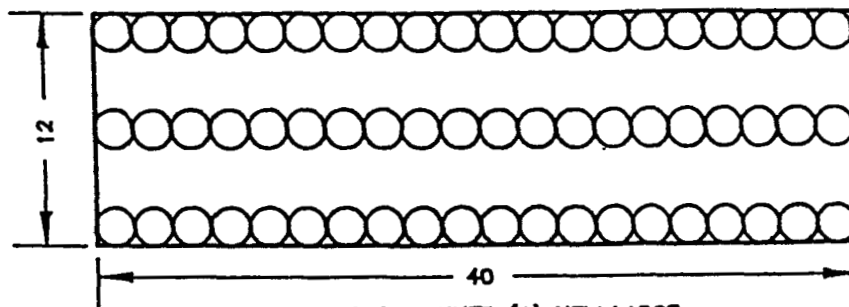
KEYWORDS		ORIGINAL ISSUE		04/29/94		SRL	SRL	PRG				
1-RCRA		DESCRIPTION		DATE		SRL	APP	DOE		BLAN	JOB NO.	
2-CONTAINER		<div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-right: 10px;">X</div> <div> <div>DESIGNED</div> <div>LOWRIE</div> <div>04/29/94</div> </div> <div> <div>DRAWN</div> <div>LOWRIE</div> <div>04/29/94</div> </div> <div> <div>CHECKED</div> <div>BOSCHMAN</div> <div>04/29/94</div> </div> <div> <div>APPROVED</div> <div></div> <div></div> </div> </div>		U.S. DEPARTMENT OF ENERGY ROCKY FLATS AREA OFFICE <div style="text-align: center; font-weight: bold; font-size: 1.2em;">Rocky Flats Plant</div> <div style="text-align: center;">COLORADO 80400</div>								
3-STORAGE												
4-WASTE												
5-SECONDARY												
6-PLANT/FACILITY												
SITE												
HDDA/NEA												
GEN												
DOE ORNL/CEL NO.												
		SUBMITTED		BOSCHMAN		04/29/94		SIZE		DRAWING NUMBER		
		APPROVED		P. HENRY						ISSUE		
		FOR REVIEW								SHEET		
MASTER		SCALE:										
YES		NO		NONE								
						B		39650-X02		A		

"COMPUTER-GENERATED, NO MANUAL CHANGES ALLOWED"

SITE
NAME
GEN

NOTES

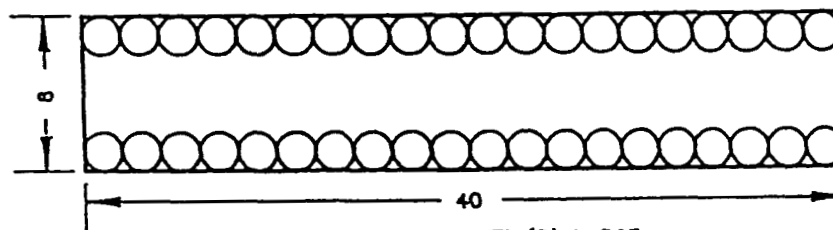
1) TYPICAL CONTAINER LAYOUT FOR UNITS 1 TO 15-A. ACTUAL ARRANGEMENT MAY VARY



CARGO CONTAINER (A) NEW LARGE
TYPICAL

SECONDARY CONTAINMENT CALCULATIONS

1. TYPICAL INVENTORY (N): DRUMS	60	ea
2. FLOOR AREA (A _f):	480	sf
3. A) TOTAL VOLUME (V _t): (V _t)=(N) 55 gal	3300	gal
B) 10% OF VOLUME (V ₁₀): (V ₁₀)=(10%) (V _t)	330	gal
C) AREA OF CONTAINERS (A _c): (A _c)=(N) 3 sf	89	sf
D) NET AREA (A _n): (A _n)=(A _f) - (A _c)	291	sf
E) MINIMUM BERM (M _b): (M _b)=((V ₁₀)/(A _n) 7.48 gal/cf) 2 in/R		in



CARGO CONTAINER (B) LARGE
TYPICAL

SECONDARY CONTAINMENT CALCULATIONS

TYPICAL INVENTORY (N): DRUMS	40	ea
2. FLOOR AREA (A _f):	320	sf
3. A) TOTAL VOLUME (V _t): (V _t)=(N) 55 gal	2200	gal
B) 10% OF VOLUME (V ₁₀): (V ₁₀)=(10%) (V _t)	220	gal
C) AREA OF CONTAINERS (A _c): (A _c)=(N) 3 sf	2	sf
D) NET AREA (A _n): (A _n)=(A _f) - (A _c)		
E) MINIMUM BERM (M _b): (M _b)=((V ₁₀)/(A _n) 7.48 gal/cf) 2 in /		



SCALE 1 = 10

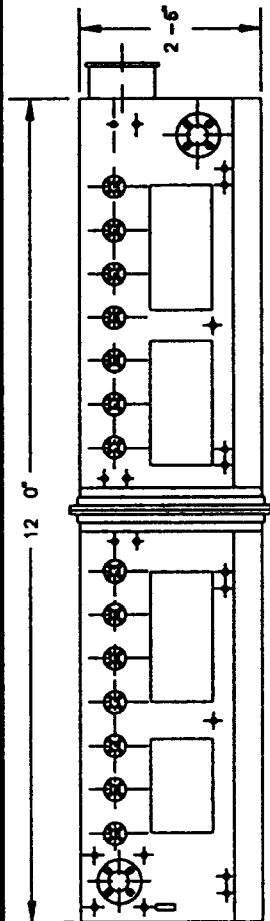
TH-116

KEYWORDS	A	ORIGINAL ISSUE	DATE	REV	DOC	CLASS	ISS NO.
RCRA		DESCRIPTION					
1. CONTAINER		POSITION	NO. OF				
2. STORAGE		DRUMS	LEAKS				
3. WASTE		DRUMS	MOD				
4. SECONDARY							
5. CARGO							
6. MASTER							

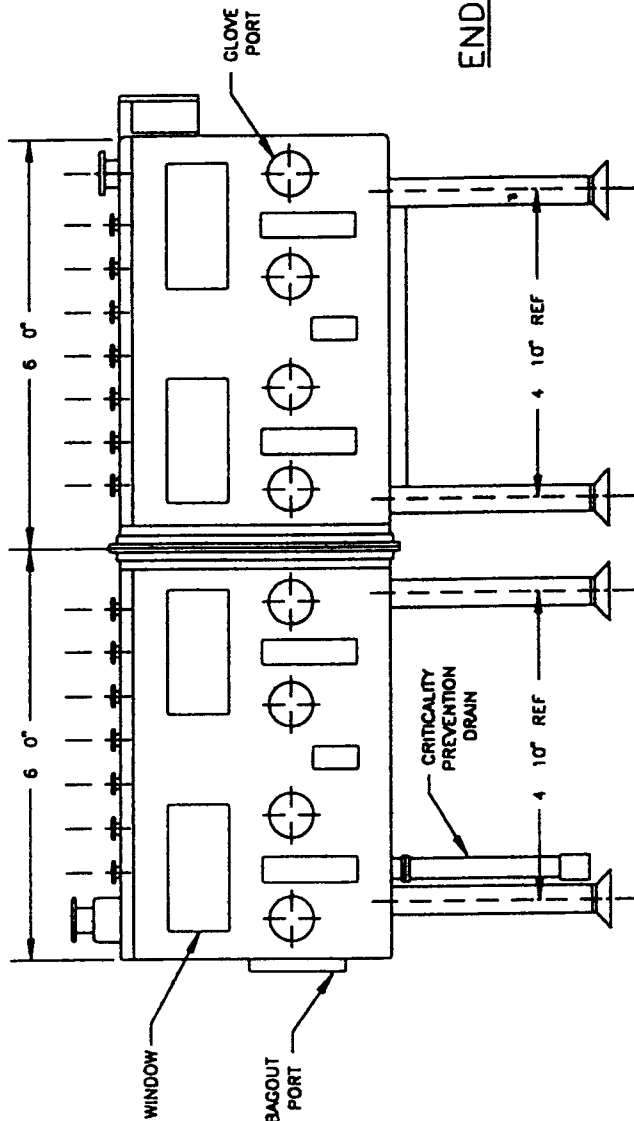
U.S. DEPARTMENT OF ENERGY
FIRST PLANT AREA OFFICE
Reedy Fls P 22
CARGO CONTAINER
SECONDARY CONTAINMENT
CALCULATIONS

79

KEYWORDS	A. ORIGINAL ISSUE									
RCRA	PLANT	DESCRIPTION	RC		OFF		DOC CLASS		JOB NO.	
CONTAINER		DESIGNED	MANUF	U. S. DEPARTMENT OF ENERGY						
STORAGE		DRAWN	USING	ROCKY FLAT AREA OFFICE						
WASTE		ENGINEER	NAME	Rocky Fls Plant						
SECONDARY		APPROVED		GOLDENGLANDS 00001						
HAZ. FACILITY				CARGO CONTAINER						
POOD / AREA				SECONDARY CONTAINMENT						
CARGO			CALCULATIONS							
DATE SUBM. / REV.				SIZE	PLANTING NUMBER	HEART	SHEET			
MASTER	SCALE	UNIT		A	302	A	✓			

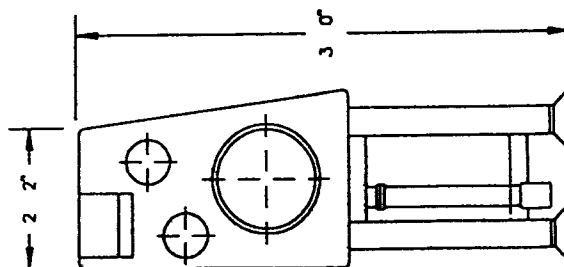


PLAN



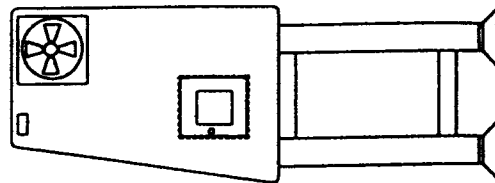
ELEVATION

NOT TO SCALE



END VIEW

END VIEW



DESIGN	DATE	BY	CHK	APP	REV	DATE	BY	CHK	APP
1									
<p>A. NEW ROCKY MOUNTAIN</p> <p>GLOVEBOX</p> <p>39850-02 A</p>									

III-11d

81

UNIT INFORMATION SHEET

1 Unit 1

Unit Description Outdoor fenced area with multiple cargo containers located on the north end of the 750 parking lot

Maximum Capacity 123 300 gallons
Liquid Capacity 123 300 gallons

EPA Waste Codes

D001 D012 D015 D019 D021 D030 D033 D035 D043
 F001 F003 F005 F009 F027 P002 P003 P004 P005
 P010-P012 P014 P016 P018 P022 P024 P027 P030 P048
 P050 P051 P059 P063 P074 P077 P087 P089 P092
 P093 P098 P101 P104 P106 P108 P113 P116 P119 P120
 P121 P123 U002 U004 U007 U009 U012 U018 U019
 U022 U027 U028 U030 U031 U034 U036 U037 U041
 U044 U047 U048 U050 U052, U053 U055 U057 U060
 U061 U063 U067 U073 U075 U077 U084 U088 U098
 U101 U103 U105 U108 U112 U113 U116-U118 U120
 U122 U123 U127 U131 U134 U137 U138 U140 U144
 U145 U147 U148 U151 U154 U159 U162 U165 U166
 U169 U170 U173 U179 U188 U190 U191 U196 U197
 U201 U202 U204 U207 U211 U213 U220 U221 U222
 U225 U228 U234 U235 U238 U240 U247 U328 U353
 U359

Waste Types Mixed hazardous

Special Unit Conditions

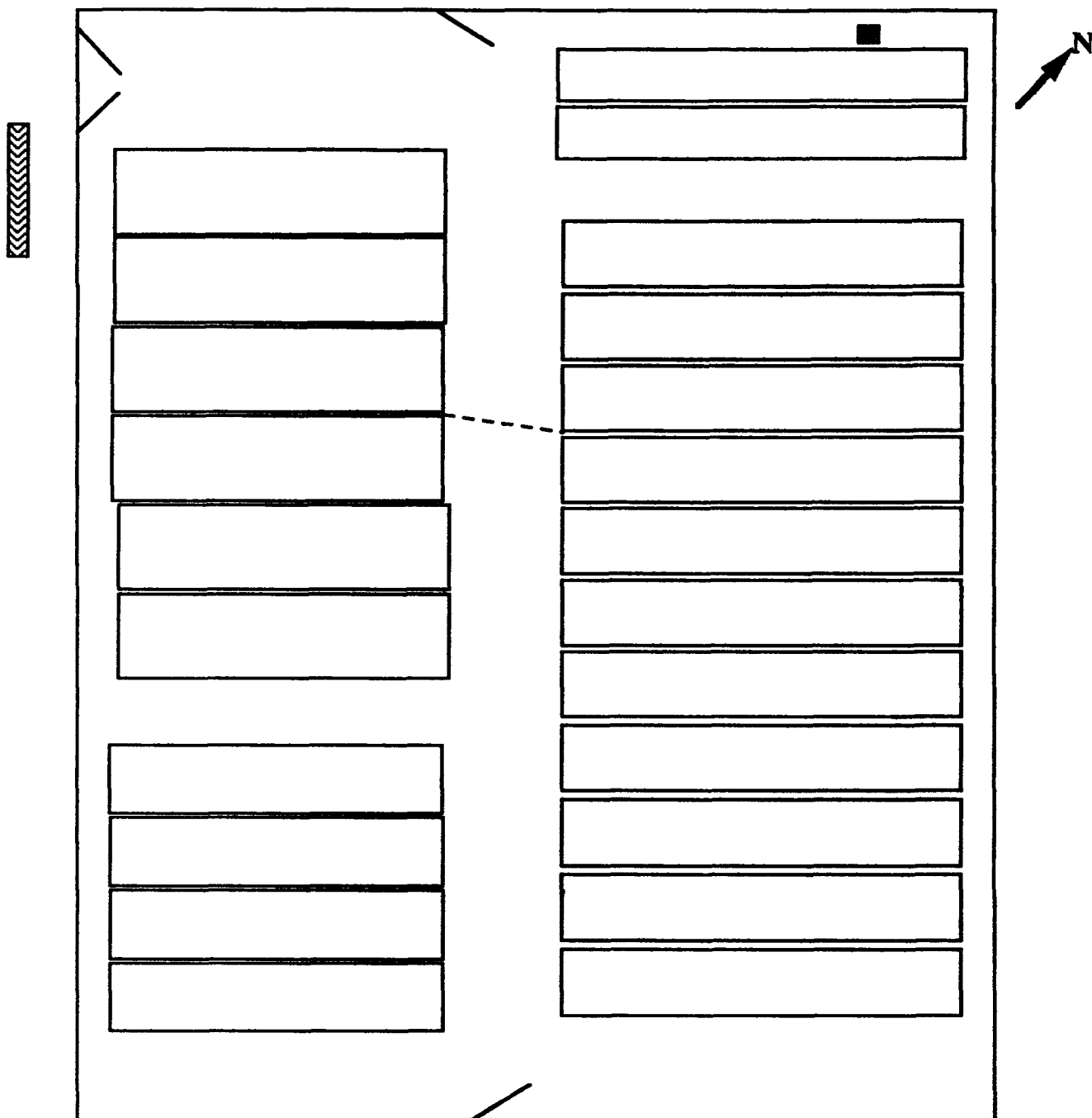
- 1) Hazardous waste will be physically separated from low level mixed waste within the unit
- 2) Manual compaction of waste and fluorescent light tube crushing is allowed in this container storage unit. A Dextnite tube crusher or similar equipment may be used for crushing fluorescent bulbs. The filters for the fluorescent lamp crusher must be changed after every third 55 gallon drum is filled with crushed bulbs or in accordance with the manufacturer's specifications.
- 3) The storage of reactive wastes within Unit 1 is governed by the following management requirements based on the specific type of hazard exhibited by the waste:
 - a Shock sensitive Wastes of this type will have their containers clearly identified and marked to identify the shock sensitive nature of the waste. These wastes will be segregated or cordoned off from main traffic areas and container movements will be minimized. Shock sensitive wastes will be stored in areas of the unit that allow easy access for required inspections and treatment. Examples of shock sensitive wastes include sodium azide, trinitrobenzene, nitromethane, tetraethylammonium perchlorate, and sodium sulfide.
 - b Peroxides and peroxide forming compounds The In situ treatment process for these wastes will allow for their treatment in the area in which they are discovered.

82

Therefore management will be limited to clearly identifying the date of treatment on the waste container and the reactivity characteristic as being present due to the waste being a peroxide or peroxide forming compound. These wastes will be stored in a flammable materials cabinet providing easy access at ambient temperatures below 100 degrees Fahrenheit. Examples of these types of waste include catalyst containing methyl ethyl ketone peroxides, methyl ethyl ketone, methyl isobutyl ketone, sodium peroxide, tetrahydrofuran, and methylcellulose.

- c. Air/water reactive metals. If the waste has not been stabilized by immersion, the container will be kept closed to prevent contact with air and moisture. If the waste has been stabilized by immersion, the levels of liquid will be visually monitored on a semi-annual basis. If the waste has been stabilized under an inert environment, the waste will be visually monitored periodically to identify any color changes, crystal formation, or other changes in appearance that may be indicative of a chemical reaction. The exterior of the container will be clearly identified as containing an air/water reactive waste and the type of stabilization that has been conducted. These wastes will be stored in a location providing easy access for periodic treatment and inspections. Examples of these types of waste include sodium metal powder, lithium metal, and sodium borohydride.
- d. Highly ignitable/low auto ignition point and special handling compounds. These wastes will be stored in a flammable materials storage cabinet isolated from any potential source of ignition. The flammable materials cabinet will be located within a storage container in the unit away from any heat sources. The containers will be clearly identified with any special handling or management requirements and will be stored in an area providing easy access for periodic inspections and treatment. Examples of this type of waste include acrylonitrile, carbon disulfide, propionaldehyde, red phosphorous, hafnium metal, titanium powder, and zirconium metal and powder.

**RCRA Unit 1
Container Storage Area**



Legend



Spill response equipment



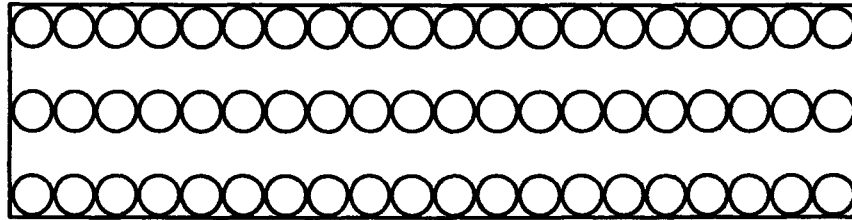
Phone



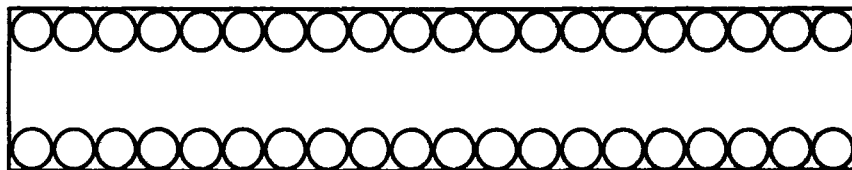
Internal fence

Cargo Containers Typical Layout by Type

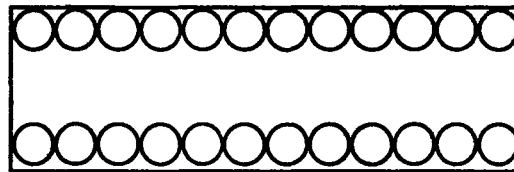
Type (A) New Large



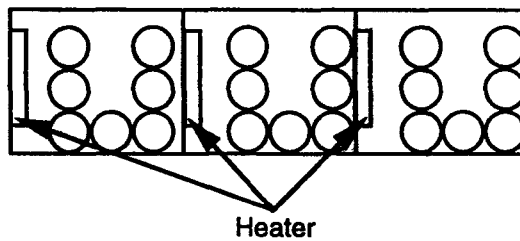
Type (B) Large



Type (C) Medium



Type (D) Small

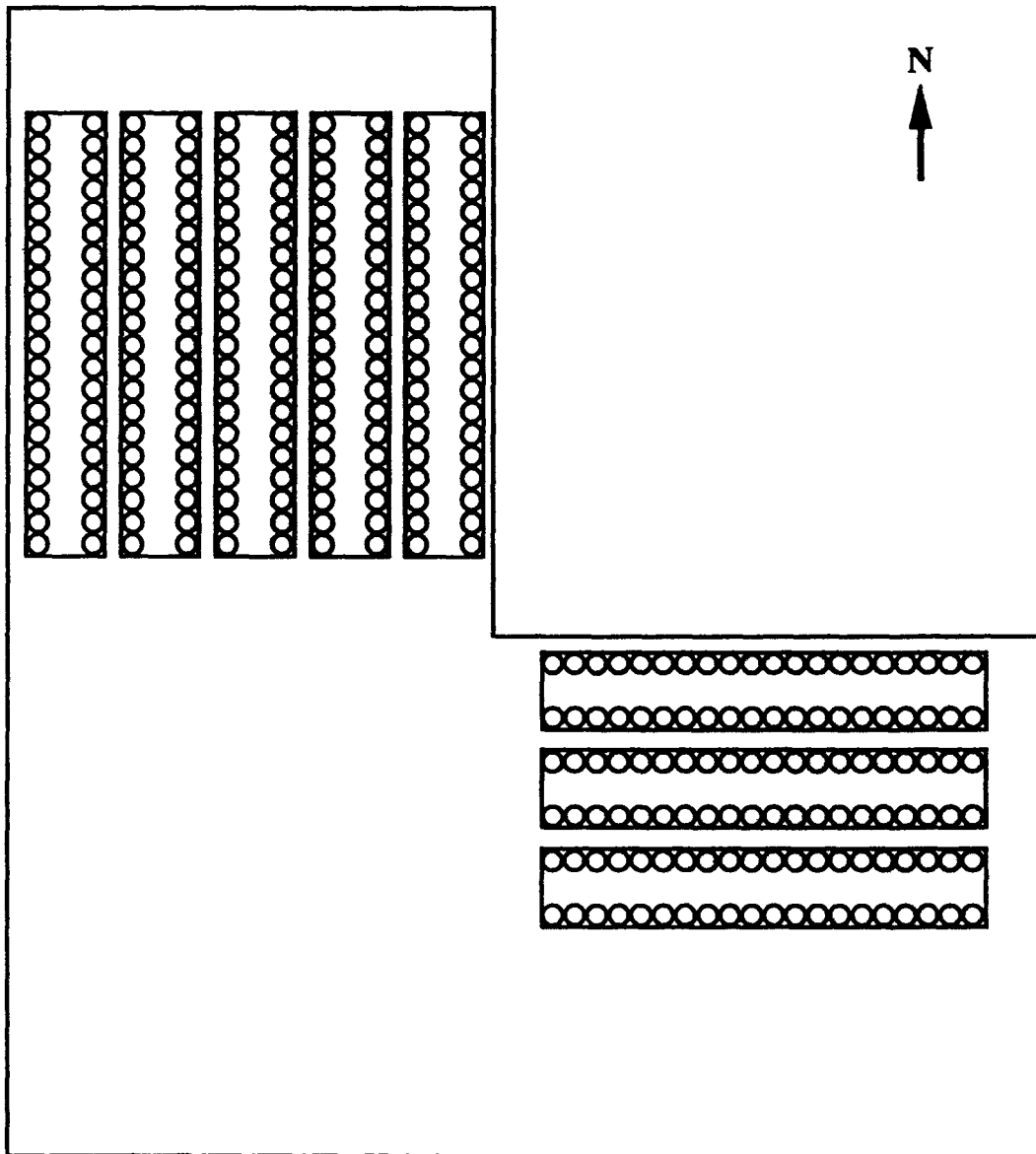


UNIT INFORMATION SHEET

2 Unit 10

Unit Description	Group of cargo containers located southwest of Building 561
Maximum Capacity	20 800 gallons
Liquid Capacity	20 800 gallons
EPA Waste Codes	D001 D012 D015 D019 D021 D029 D033 D035 D043 F001 F003 F005 F007 F009 F027 P002 P003 P005 P010-P012 P014 P016 P018 P022 P024 P027 P030 P048 P051 P059 P074 P077 P087 P092 P093 P098 P101 P104 P106 P108 P113 P116 P119 P121 P123 U002 U004 U007 U009 U012 U018 U019 U020 U022 U027 U028 U030 U031 U034 U036 U037 U041 U044 U047 U048 U050 U052 U053 U055 U057 U063 U067 U073 U075 U077 U084 U088 U098 U101 U103 U105 U108 U112 U113 U116 U118 U120 U122 U123 U127 U131 U134 U137 U138 U140 U144 U147 U148 U151 U154 U159 U161 U162 U165 U166 U169 U170 U173 U179 U188 U190 U191 U196 U197 U201 U202 U204 U207 U211 U213 U220 U222 U225 U228 U235 U238 U240 U328 U353 U359
Waste Types	Mixed
Special Unit Conditions	None

**RCRA Unit 10
Container Storage Area
Building 561**



NOTES

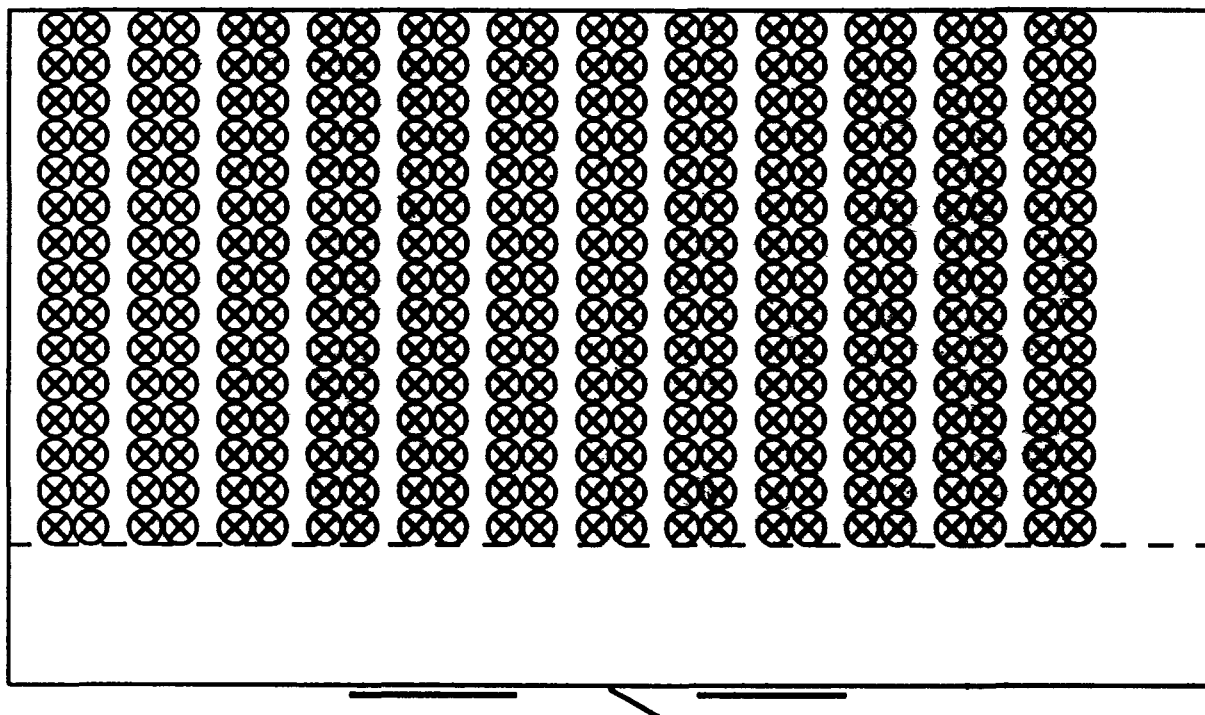
- 1) Typical container layout, actual arrangement may vary

UNIT INFORMATION SHEET

3 Unit 13

Unit Description	Building 884 is a corrugated steel building located south of Central Avenue
Maximum Capacity	55 440 gallons
Liquid Capacity	36 960 gallons
EPA Waste Codes	D001 D012 D015 D019 D021 D029 D033 D035 D043 F001 F003 F005 F007 F009 F027 P015
Waste Types	Mixed
Special Unit Conditions	None

**RCRA Unit 13
Container Storage Unit
Building 884**



Legend.



Stacked containers



Roll up door

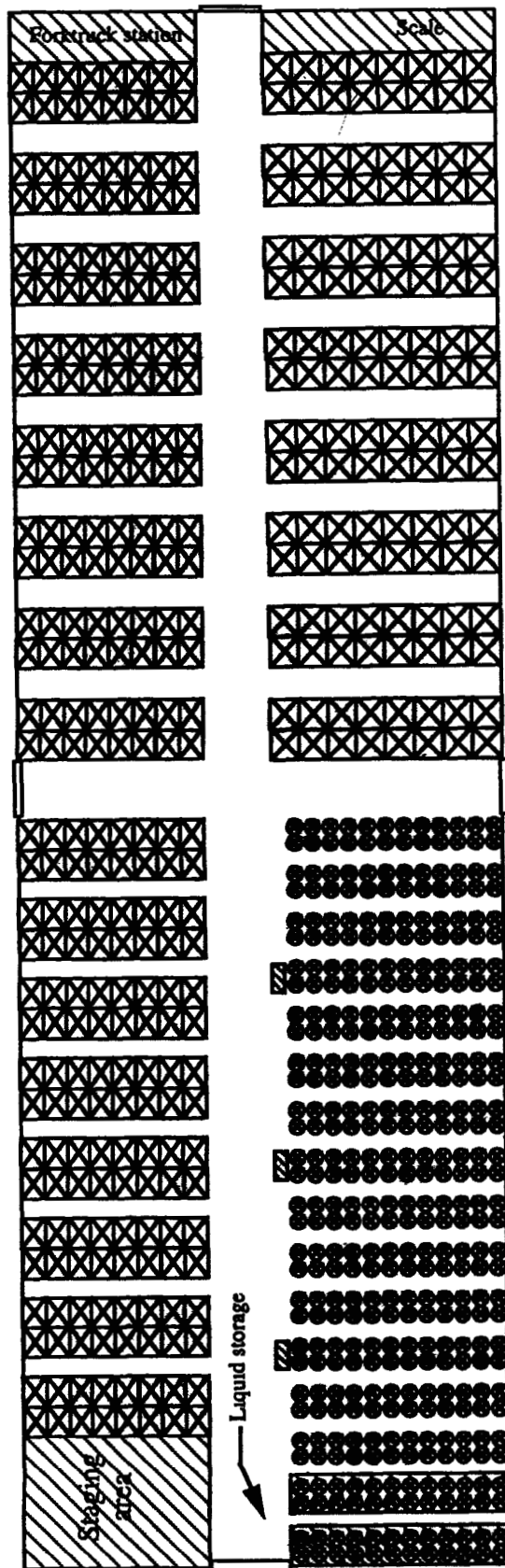
NOTES

- 1) Typical container layout, actual arrangement may vary

UNIT INFORMATION SHEET

4 Unit 14

Unit Description	Building 906 is a steel building located west of the 904 Pad.
Maximum Capacity	1 050 400 gallons (5,200 cubic yards)
Liquid Capacity	5,500 gallons
EPA Waste Codes	D001 D011 D016 D019 D021 D022 D024-D029 D033 D035 D041 D043 F001 F003 F005 F009 F027 F039 P011 P012 P014 P015 P022 P028 P029 P045 P062 P076 P087 P098 P101 P104 P106 P113 P119 P121 U002 U004 U019 U031 U037 U041 U042 U044 U055 U057 U067 U071 U074 U075 U077 U079 U080 U084 U098 U102 U107 U108 U112 U120-U123 U127 U131 U133 U134 U138 U144, U148 U151 U154 U158 U159 U161 U162 U165 U167 U169 U170 U188 U190 U191 U196 U201 U207 U209 U211 U213 U220 U225 U227 U228 U236 U239 U246 U328 U353 U359
Waste Types	Mixed hazardous
Special Unit Conditions	None



N ↑

crates.
1 152

55 gallon drums
1 536

Unit Capacity
(Typical Inventory)

RCRA Unit 14
Building 906

Note
Drawing shows a typical layout Actual
arrangement and combination of container
types may vary

III-16a

UNIT INFORMATION SHEET

5 Unit 15A

Unit Description	Outdoor fenced area with multiple cargo containers located south of Central Avenue on the 904 Pad
Maximum Capacity	71 565 gallons in drums in cargo containers and 151 470 gallons (750 cubic yards) in crates outside of cargo containers
Liquid Capacity	71 565 gallons
EPA Waste Codes	D001 D012 D015 D019 D021 D029 D033 D035 D043 F001 F003 F005 F007 F009 F027 P002 P003 P005 P010-P012 P014 P016 P018 P022 P024 P027 P030 P048 P051 P059 P074 P077 P087 P092 P093 P098 P101 P104 P106 P108 P113 P116 P119 P121 P123 U002 U004 U007 U009 U012 U018 U019 U022 U027 U028 U030 U031 U034 U036 U037 U041 U044 U047 U048 U050 U052 U053 U055 U057 U063 U067 U073 U075 U077 U084 U088 U098 U101 U103 U105 U108 U112 U113 U116 U118 U120 U122 U123 U127 U131 U134 U137 U138 U140 U144 U147 U148 U151 U154 U159 U161 U162 U165 U166 U169 U170 U173 U179 U188 U190 U191 U196 U197 U201 U202 U204 U207 U211 U213 U220 U222 U225 U228 U235 U238 U240 U328 U353 U359
Waste Types	Mixed
Special Unit Conditions	

- 1) Manual compaction of waste and fluorescent light tube crushing is allowed in this container storage unit. A 'Dextrite tube crusher' or similar equipment may be used for crushing fluorescent bulbs. The filters for the fluorescent lamp crusher must be changed after every third 55 gallon drum is filled with crushed bulbs or in accordance with the manufacturer's specifications.

92

**RCRA Unit 15A
Container Storage Area
904 Pad**

Cargo container
storage area

Crate storage



Stacked Containers

NOTES

- 1) Typical container layout actual arrangement may vary
- 2) All crates may be stacked three high

UNIT INFORMATION SHEET

6 Unit 15B

Unit Description Multiple tents located on the 904 Pad and Tent 7 located directly west of the 904 Pad

Maximum Capacity 15 981 cubic yards (3 228 162 gallons)
Liquid Capacity 13 975 cubic yards (2 822 950 gallons)

EPA Waste Codes D001 D011 D018 D019 D022 D028 D029 D035 D038,
D040 D043 F001 F003 F005 F007 F009 F039 P002
P003 P005 P010 P012 P014 P016 P018 P022 P024
P027 P030 P048 P051 P059 P074 P077 P087 P092 P093
P098 P101 P104-P106 P108 P113 P116 P119 P121 P123
U002 U004 U007 U009 U012 U018 U019 U022 U027
U028 U030 U031 U034 U036 U037 U041 U044 U047
U048 U050 U052 U053 U055 U057 U063 U067 U073
U075 U077 U084 U088 U098 U101 U103 U105 U108
U112 U113 U116 U118 U120 U122 U123 U127 U131
U134 U137 U138 U140 U144 U147 U148 U151 U154
U159 U161 U162 U165 U166 U169 U170 U173 U179
U188 U190 U191 U196 U197 U201 U202 U204 U207
U211 U213 U220 U222 U225 U228 U235 U238 U240
U328 U353 U359

Waste Types Mixed hazardous

Special Unit Conditions

- 1) Crates with fiberglass lids may be stored in this unit.
- 2) The Permittee shall comply with the 750/904 Pad Tent Panel Repair/Replacement Contingency Plan dated August 8 1996
- 3) Runoff water resulting from precipitation will be discharged from the pad, and will be managed as non hazardous waste
- 4) Wooden crates that could be exposed to precipitation will be covered with plastic sheeting

94

750/904 PAD
Tent Panel Repair/Replacement
Contingency Plan
8-8-96

Damaged tent panels will be either repaired or replaced as soon as practicable after damage is identified. In order to minimize exposure of hazardous waste containers to the elements and to ensure that tent repairs are completed as quickly as possible the following precautions will be taken:

A minimum supply of five replacement panels will be maintained on site or once an in stock panel is used a replacement panel will be ordered to maintain the supply. The supply will be increased by a minimum of five panels each September beginning in 1997 to accommodate panel failures associated with normal deterioration. The minimum supply requirement will not exceed 20 panels.

An offsite vendor with the capability to manufacture and deliver panels as necessary will remain on contract.

Daily (for tents containing tanks) and weekly RCRA inspections will include a visual inspection of the inside of each tent to identify damaged panels.

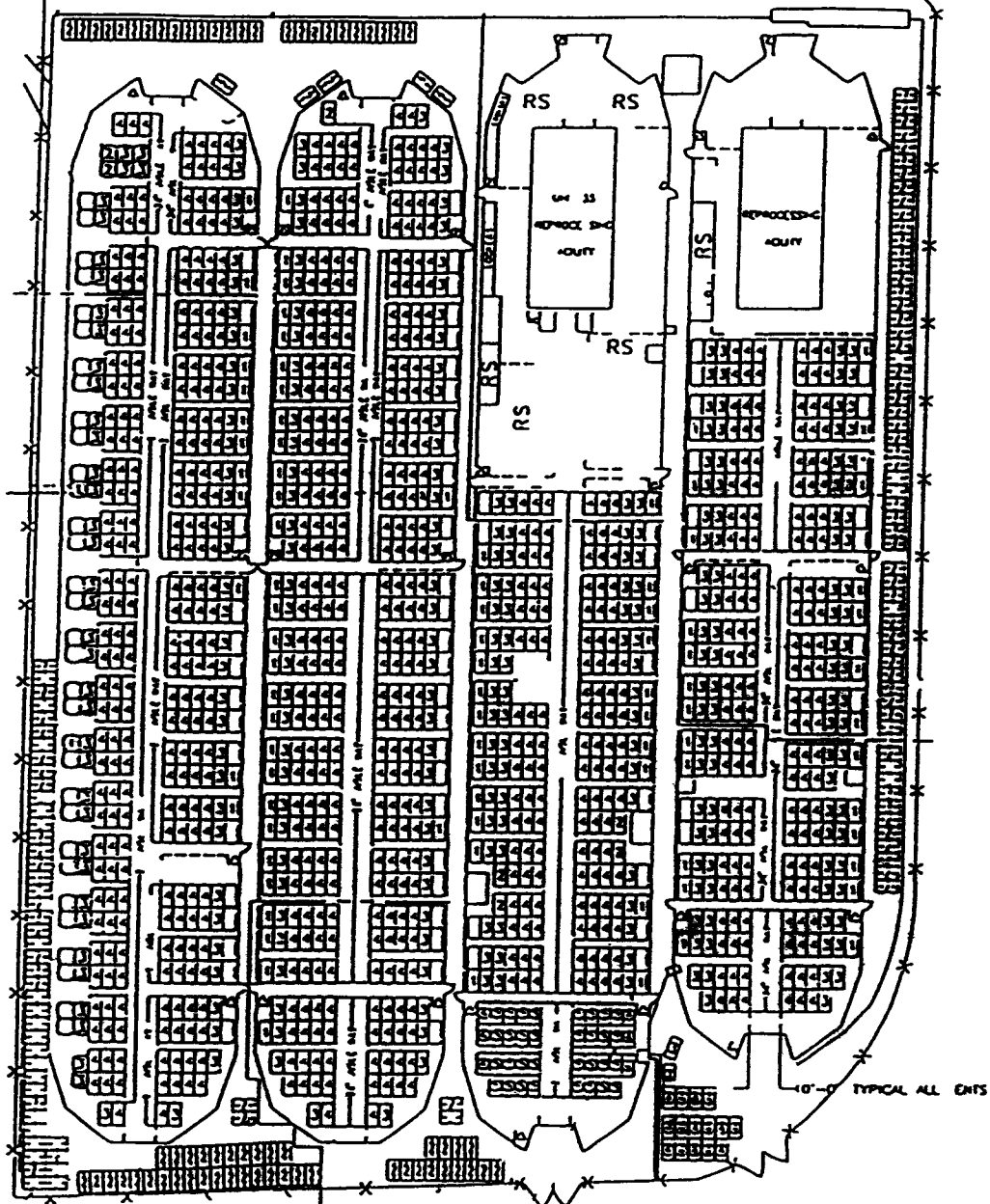
The attached preventive maintenance (PM) work package (PM Control No. M*442001) will be employed twice per year (each Spring and each Fall) as well as after any significant wind event. After the PM is performed any repair or replacement that is determined to be in order will be initiated immediately.

Plywood crates and drums which are exposed to possible precipitation will be covered with tarps (within 24 hours) to prevent container deterioration.

Tanks containing pond sludge which are exposed to possible precipitation will be covered (within 48 hours) to prevent precipitation from entering tanks or their secondary containment.

1
N

UNIT 15B - 904 PAD LAYOUT



LEGEND

N C E T H O U C
 E Y E S I O N
 M O M O R I N G W E L
 R S R E C T E D S P A C E
 B C B A T T E R Y C H A R G E R

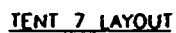
III-18b

E	CLARIFY ASL SPACING & NOTE 6	1/13/95	USE	USE	AS	RS	986312
D	ADD CRATES ON OUTSIDE OF TENTS	3/30/95	USE	USE	AS	RS	9869 2
C	DRAWING UPON E	1/13/95	USE	USE	AS	RS	9891 8
B	UPDATE CRATE SIZES LOCATIONS	10/18/94	USE	USE	AS	RS	9859

KEYWORDS	ISSUE	DESCRIPTION	DATE	APP	DOC CLASS	JOB #
1 CRATE	ISSUE	DESCRIPTION	DATE	APP	DOC CLASS	JOB #
2 SALT/RETE	ISSUE	DESCRIPTION	DATE	APP	DOC CLASS	JOB #
3	ISSUE	DESCRIPTION	DATE	APP	DOC CLASS	JOB #
4	ISSUE	DESCRIPTION	DATE	APP	DOC CLASS	JOB #
5	ISSUE	DESCRIPTION	DATE	APP	DOC CLASS	JOB #
6	ISSUE	DESCRIPTION	DATE	APP	DOC CLASS	JOB #
7	ISSUE	DESCRIPTION	DATE	APP	DOC CLASS	JOB #
8	ISSUE	DESCRIPTION	DATE	APP	DOC CLASS	JOB #
9	ISSUE	DESCRIPTION	DATE	APP	DOC CLASS	JOB #
10	ISSUE	DESCRIPTION	DATE	APP	DOC CLASS	JOB #

U. S. DEPARTMENT OF EMERG
 Read: Flat Floor
 COLON COLON-00
 90 PAD
 TENT LAYOUT

97



☐ HE OVERSEAS WITH 72 CRATES. INDICATES AC HIGH
PRESSURE IN
THE TROUSERS

[illegible]

NOTES

THESE NUMBER INDICATES THE ROW THE CHAIR
INDICATES THE ROWS ARE NUMBERED
FROM THE FRONT OF THE ROOM
LOCATED TOWARD THE BACK OF THE ROOM

THIS LETTER INDICATES THE CRATE AXIS LOCATION INDICATED BY THE STACKS ARE ORIENTED FULLY BECOMING WITH THE LETTER ON THE NORTH SIDE OF THE TUN MOUNTAIN THE LETTER ON THE SOUTH SIDE OF THE TUN (SEE SECTION)

THIS NUMBER INDICATES THE CRATE LOCATION ON THE BOTTOM UPWARD FROM THE BOTTOM LEFT HAND CORNER OF THE CRATE

Abstract

LEGEND

DATE	LOCAL	ACT. MILEAGE
1964		
1965		
1966		
1967		
1968		
1969		
1970		
1971		
1972		
1973		
1974		
1975		
1976		
1977		
1978		
1979		
1980		
1981		
1982		
1983		
1984		
1985		
1986		
1987		
1988		
1989		
1990		
1991		
1992		
1993		
1994		
1995		
1996		
1997		
1998		
1999		
2000		
2001		
2002		
2003		
2004		
2005		
2006		
2007		
2008		
2009		
2010		
2011		
2012		
2013		
2014		
2015		
2016		
2017		
2018		
2019		
2020		
2021		
2022		
2023		
2024		
2025		
2026		
2027		
2028		
2029		
2030		
2031		
2032		
2033		
2034		
2035		
2036		
2037		
2038		
2039		
2040		
2041		
2042		
2043		
2044		
2045		
2046		
2047		
2048		
2049		
2050		
2051		
2052		
2053		
2054		
2055		
2056		
2057		
2058		
2059		
2060		
2061		
2062		
2063		
2064		
2065		
2066		
2067		
2068		
2069		
2070		
2071		
2072		
2073		
2074		
2075		
2076		
2077		
2078		
2079		
2080		
2081		
2082		
2083		
2084		
2085		
2086		
2087		
2088		
2089		
2090		
2091		
2092		
2093		
2094		
2095		
2096		
2097		
2098		
2099		
2100		

WILSON ENTERPRISES, INC.

AND JOHN B. WATSON

Case **Exclusivity of R**

CRATE DESIGNATOR

0182

MON 35 NOV 2011 W 3

Case No.	Case Name	Case Status	Case Type
1	Case 1	Open	Case 1
2	Case 2	Open	Case 2
3	Case 3	Open	Case 3
4	Case 4	Open	Case 4
5	Case 5	Open	Case 5
6	Case 6	Open	Case 6
7	Case 7	Open	Case 7
8	Case 8	Open	Case 8
9	Case 9	Open	Case 9
10	Case 10	Open	Case 10
11	Case 11	Open	Case 11
12	Case 12	Open	Case 12
13	Case 13	Open	Case 13
14	Case 14	Open	Case 14
15	Case 15	Open	Case 15
16	Case 16	Open	Case 16
17	Case 17	Open	Case 17
18	Case 18	Open	Case 18
19	Case 19	Open	Case 19
20	Case 20	Open	Case 20
21	Case 21	Open	Case 21
22	Case 22	Open	Case 22
23	Case 23	Open	Case 23
24	Case 24	Open	Case 24
25	Case 25	Open	Case 25
26	Case 26	Open	Case 26
27	Case 27	Open	Case 27
28	Case 28	Open	Case 28
29	Case 29	Open	Case 29
30	Case 30	Open	Case 30
31	Case 31	Open	Case 31
32	Case 32	Open	Case 32
33	Case 33	Open	Case 33
34	Case 34	Open	Case 34
35	Case 35	Open	Case 35
36	Case 36	Open	Case 36
37	Case 37	Open	Case 37
38	Case 38	Open	Case 38
39	Case 39	Open	Case 39
40	Case 40	Open	Case 40
41	Case 41	Open	Case 41
42	Case 42	Open	Case 42
43	Case 43	Open	Case 43
44	Case 44	Open	Case 44
45	Case 45	Open	Case 45
46	Case 46	Open	Case 46
47	Case 47	Open	Case 47
48	Case 48	Open	Case 48
49	Case 49	Open	Case 49
50	Case 50	Open	Case 50
51	Case 51	Open	Case 51
52	Case 52	Open	Case 52
53	Case 53	Open	Case 53
54	Case 54	Open	Case 54
55	Case 55	Open	Case 55
56	Case 56	Open	Case 56
57	Case 57	Open	Case 57
58	Case 58	Open	Case 58
59	Case 59	Open	Case 59
60	Case 60	Open	Case 60
61	Case 61	Open	Case 61
62	Case 62	Open	Case 62
63	Case 63	Open	Case 63
64	Case 64	Open	Case 64
65	Case 65	Open	Case 65
66	Case 66	Open	Case 66
67	Case 67	Open	Case 67
68	Case 68	Open	Case 68
69	Case 69	Open	Case 69
70	Case 70	Open	Case 70
71	Case 71	Open	Case 71
72	Case 72	Open	Case 72
73	Case 73	Open	Case 73
74	Case 74	Open	Case 74
75	Case 75	Open	Case 75
76	Case 76	Open	Case 76
77	Case 77	Open	Case 77
78	Case 78	Open	Case 78
79	Case 79	Open	Case 79
80	Case 80	Open	Case 80
81	Case 81	Open	Case 81
82	Case 82	Open	Case 82
83	Case 83	Open	Case 83
84	Case 84	Open	Case 84
85	Case 85	Open	Case 85
86	Case 86	Open	Case 86
87	Case 87	Open	Case 87
88	Case 88	Open	Case 88
89	Case 89	Open	Case 89
90	Case 90	Open	Case 90
91	Case 91	Open	Case 91
92	Case 92	Open	Case 92
93	Case 93	Open	Case 93
94	Case 94	Open	Case 94
95	Case 95	Open	Case 95
96	Case 96	Open	Case 96
97	Case 97	Open	Case 97

www.southcoast.com

RESEARCH DESIGN

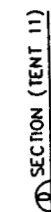
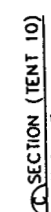
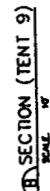
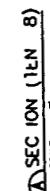
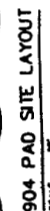
9

INFORMATION ONLY

[illegible]

III-18d





INFORMATION ONLY

CLARITY FILE SHOTS & MARK	DATE	TIME	LOCATION	REMARKS
AND CHANGES IN ORIGIN	12/24/41	11:00 AM	WAPPAWA LAKE	050911Z
BEFORE SERVICE				050912Z
ONCE ONE PAIR LOCATED				050913Z
ORANGE, WHITE				050914Z
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10
11	11	11	11	11
12	12	12	12	12
13	13	13	13	13
14	14	14	14	14
15	15	15	15	15
16	16	16	16	16
17	17	17	17	17
18	18	18	18	18
19	19	19	19	19
20	20	20	20	20
21	21	21	21	21
22	22	22	22	22
23	23	23	23	23
24	24	24	24	24
25	25	25	25	25
26	26	26	26	26
27	27	27	27	27
28	28	28	28	28
29	29	29	29	29
30	30	30	30	30
31	31	31	31	31
32	32	32	32	32
33	33	33	33	33
34	34	34	34	34
35	35	35	35	35
36	36	36	36	36
37	37	37	37	37
38	38	38	38	38
39	39	39	39	39
40	40	40	40	40
41	41	41	41	41
42	42	42	42	42
43	43	43	43	43
44	44	44	44	44
45	45	45	45	45
46	46	46	46	46
47	47	47	47	47
48	48	48	48	48
49	49	49	49	49
50	50	50	50	50
51	51	51	51	51
52	52	52	52	52
53	53	53	53	53
54	54	54	54	54
55	55	55	55	55
56	56	56	56	56
57	57	57	57	57
58	58	58	58	58
59	59	59	59	59
60	60	60	60	60
61	61	61	61	61
62	62	62	62	62
63	63	63	63	63
64	64	64	64	64
65	65	65	65	65
66	66	66	66	66
67	67	67	67	67
68	68	68	68	68
69	69	69	69	69
70	70	70	70	70
71	71	71	71	71
72	72	72	72	72
73	73	73	73	73
74	74	74	74	74
75	75	75	75	75
76	76	76	76	76
77	77	77	77	77
78	78	78	78	78
79	79	79	79	79
80	80	80	80	80
81	81	81	81	81
82	82	82	82	82
83	83	83	83	83
84	84	84	84	84
85	85	85	85	85
86	86	86	86	86
87	87	87	87	87
88	88	88	88	88
89	89	89	89	89
90	90	90	90	90
91	91	91	91	91
92	92	92	92	92
93	93	93	93	93
94	94	94	94	94
95	95	95	95	95
96	96	96	96	96
97	97	97	97	97
98	98	98	98	98
99	99	99	99	99
100	100	100	100	100

ITEM NUMBER	CAR SCHEDULE				TOTAL PER ORDER
	62" x 12" x 10"	100" x 6"	47 3/4" x 2 Oxidized	47 3/4" x 6" Oxidized	
101	20	10+			24
102		40			40
103		60	64		60
104		80	85		45
ORDER	50	400		0	
TOTAL PER ORDER					

III-18e

99

UNIT INFORMATION SHEET

7 Unit 18.03

Unit Description Fenced area with cargo containers and racks located in the parking area east of Building 551

Maximum Capacity 472 245 gallons

Liquid Capacity 92 400 gallons

EPA Waste Codes D001 D002 D004 D009 D011 D019 D022 D027 D029
D035 D039 D040 D043 F001 F002 F005 F007 F009

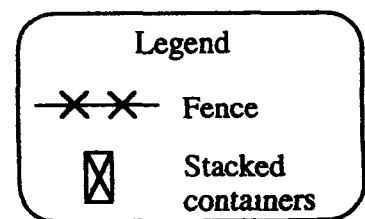
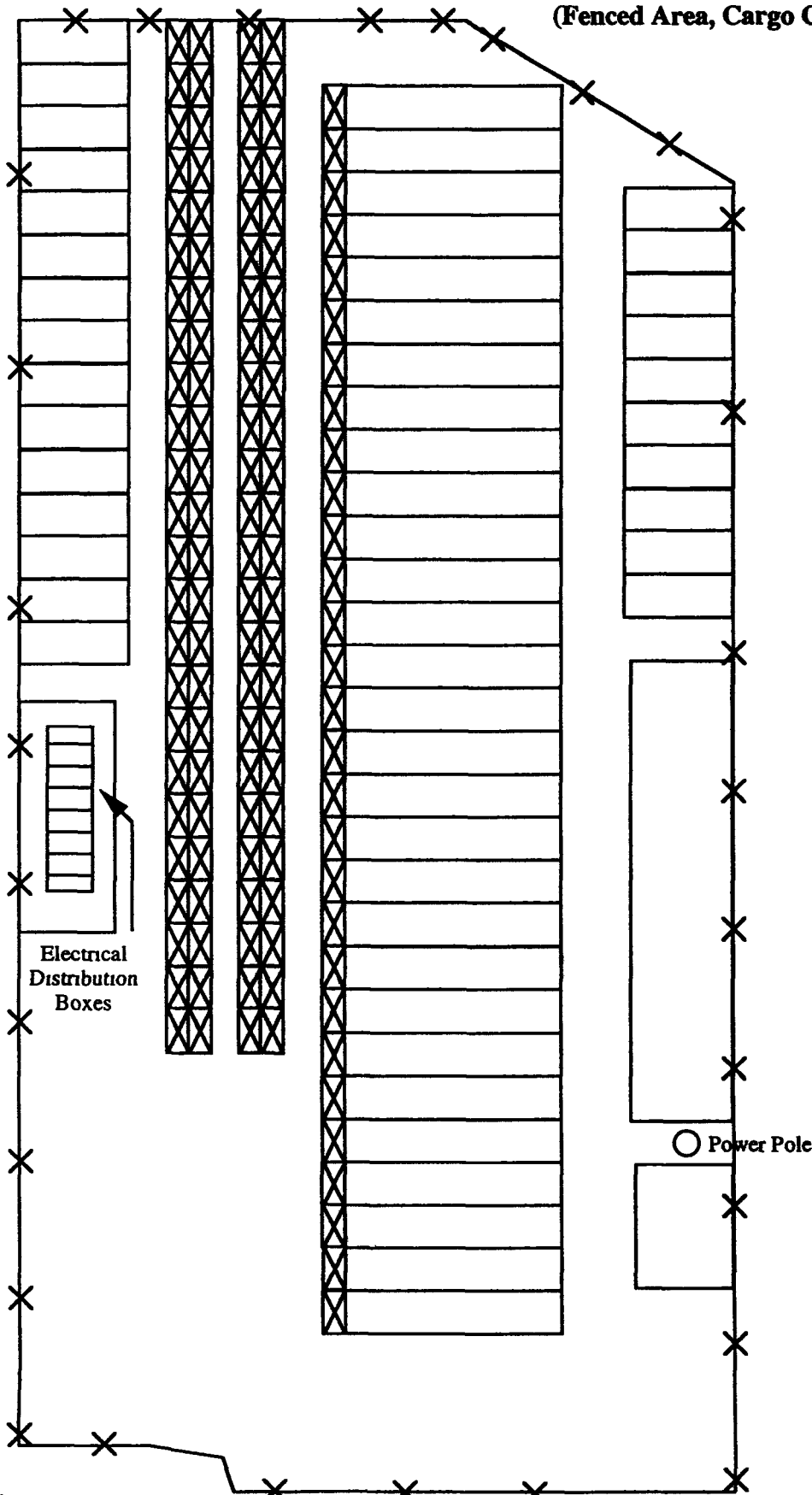
Waste Types Mixed

Special Unit Conditions

- 1) Crates with fiberglass lids are approved for use on containers stored at this unit.

RCRA Unit 18 03
Fenced Area, East of Building 551
Container Storage Area

(Fenced Area, Cargo Containers, Racks with Covers)



101

III 19a

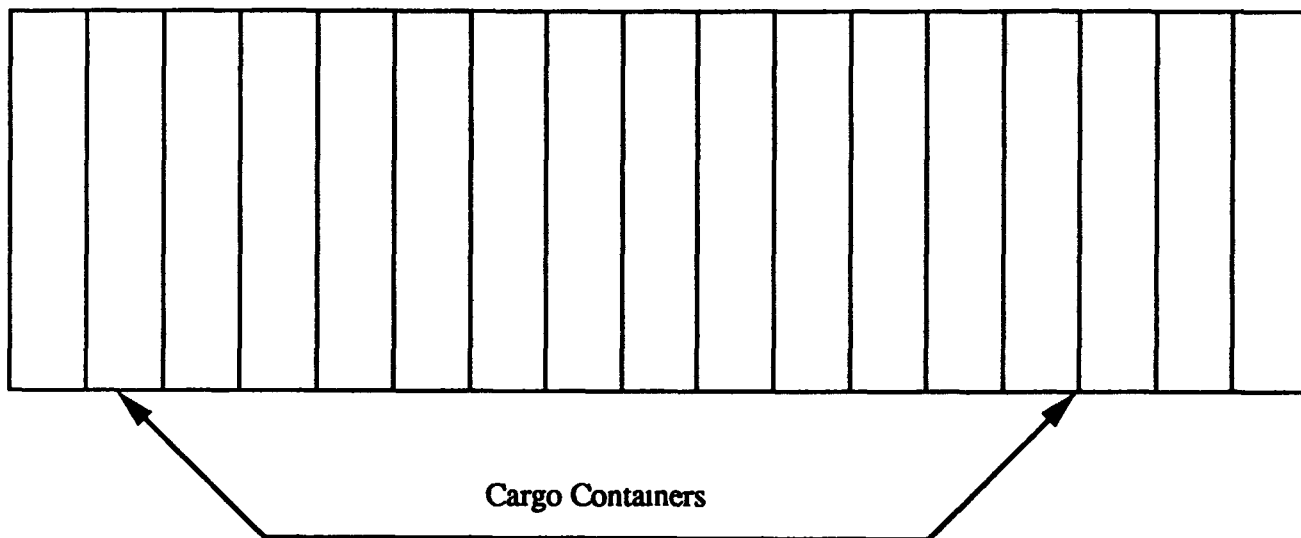
UNIT INFORMATION SHEET

8 Unit 18.04

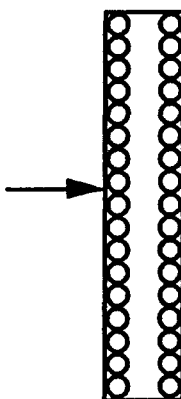
Unit Description	Building 892 and cargo containers located south of Unit 14 Centralized Waste Storage Facility
Maximum Capacity Liquid Capacity	903 cubic yards (182 406 gallons) 87 340 gallons
EPA Waste Codes	D004 D009 D011 D019 D022 D027 D029 D035 D039 D040 D043 F001 F003 F005 F007 F009 F039
Waste Types	Mixed hazardous
Special Unit Conditions	None

102

**RCRA Unit 18 04
Containers Storage Area**

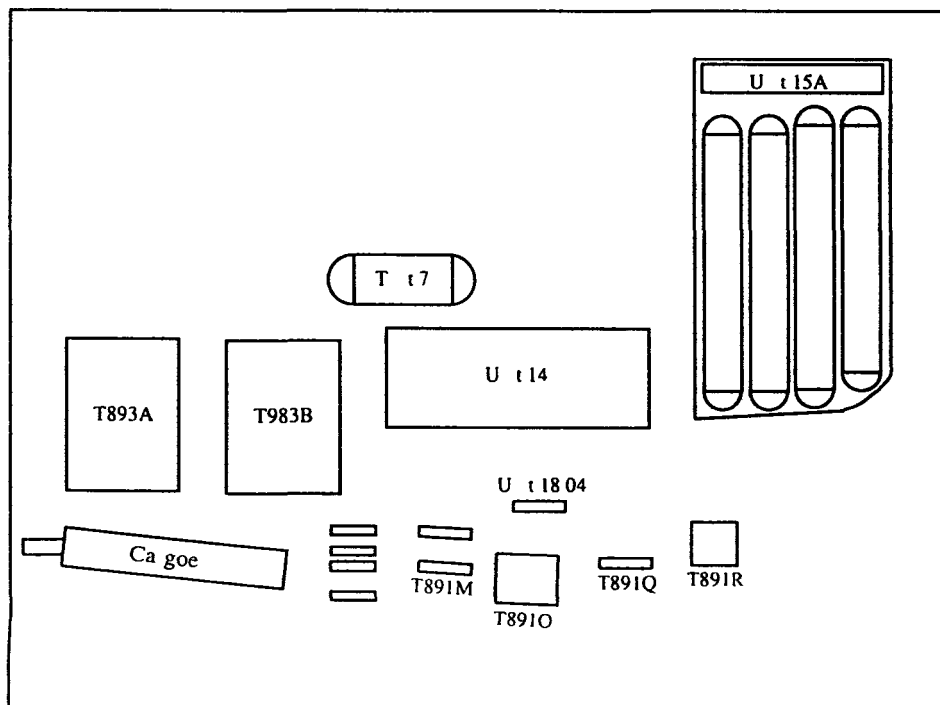
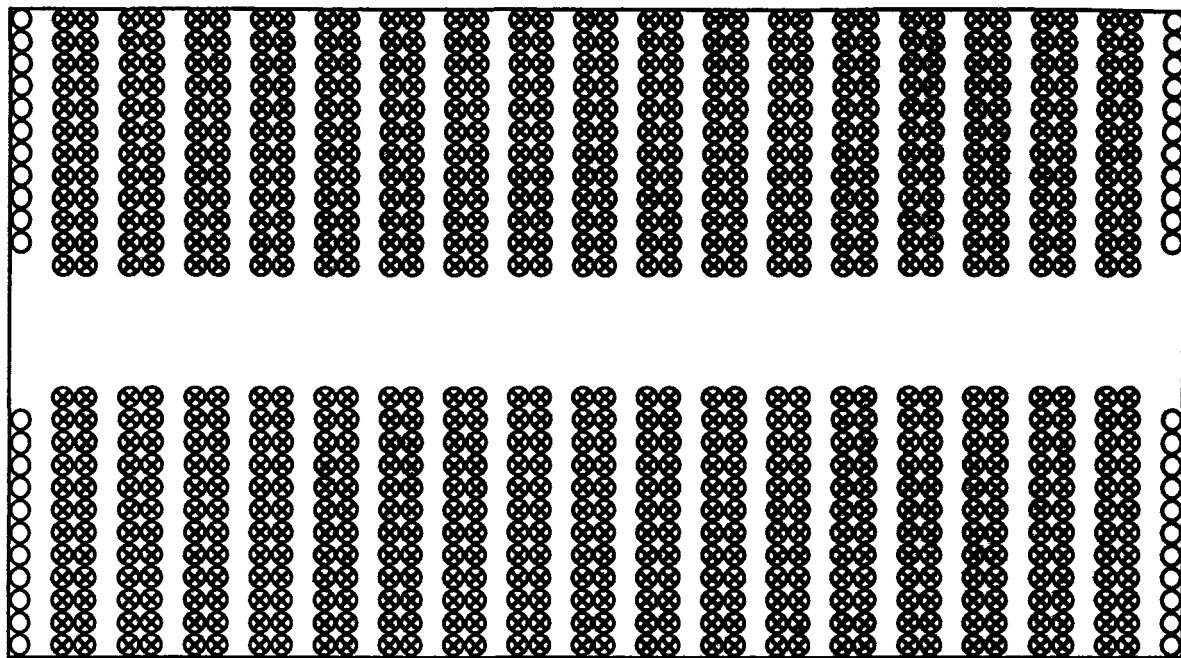


Cargo
Container
(Typical)



NOTES

- 1) Typical container layout, actual arrangement may vary



Legend

⊗ Stacked Containers

RCRA Unit 18 04
Building 892

104

III 206

UNIT INFORMATION SHEET

9 Unit 20

Unit Description	Building 664 is a metal building on the southwest side of the facility in which container storage occurs in Rooms 100 110 and the High Bay area
Maximum Capacity	230 248 gallons
Liquid Capacity	1 760 gallons
EPA Waste Codes	D001 D011 D016 D019 D021 D022 D024 D030 D035 D041 D043 F001 F003, F005 F009 F027 P002 P003 P005 P010-P012 P014-P016 P018 P022 P024 P027 P030 P045 P048 P051 P059 P062 P074 P076 P077 P087 P092 P093 P098 P101 P104 P106 P108 P113 P116 P119 P121 P123 U002 U004 U007 U009 U012 U018 U019 U022 U027 U028 U030 U031 U034 U036 U037 U041 U044 U047 U048 U050 U052 U053 U055 U057 U063 U067 U075 U077 U084 U088 U098 U101 U103 U105 U108 U112 U113 U116 U118 U120-U123 U127 U131 U133 U134 U137 U138 U140 U144 U147 U148 U151 U154 U158 U159 U161 U162 U165 U167 U169 U170 U173 U179 U188 U190 U191 U196 U197 U201 U202 U204 U207 U211 U213 U220 U222 U225 U228 U235 U236 U238 U240 U246 U328 U353 U359
Waste Types	Mixed hazardous
Special Unit Conditions	None

105

106



Legend

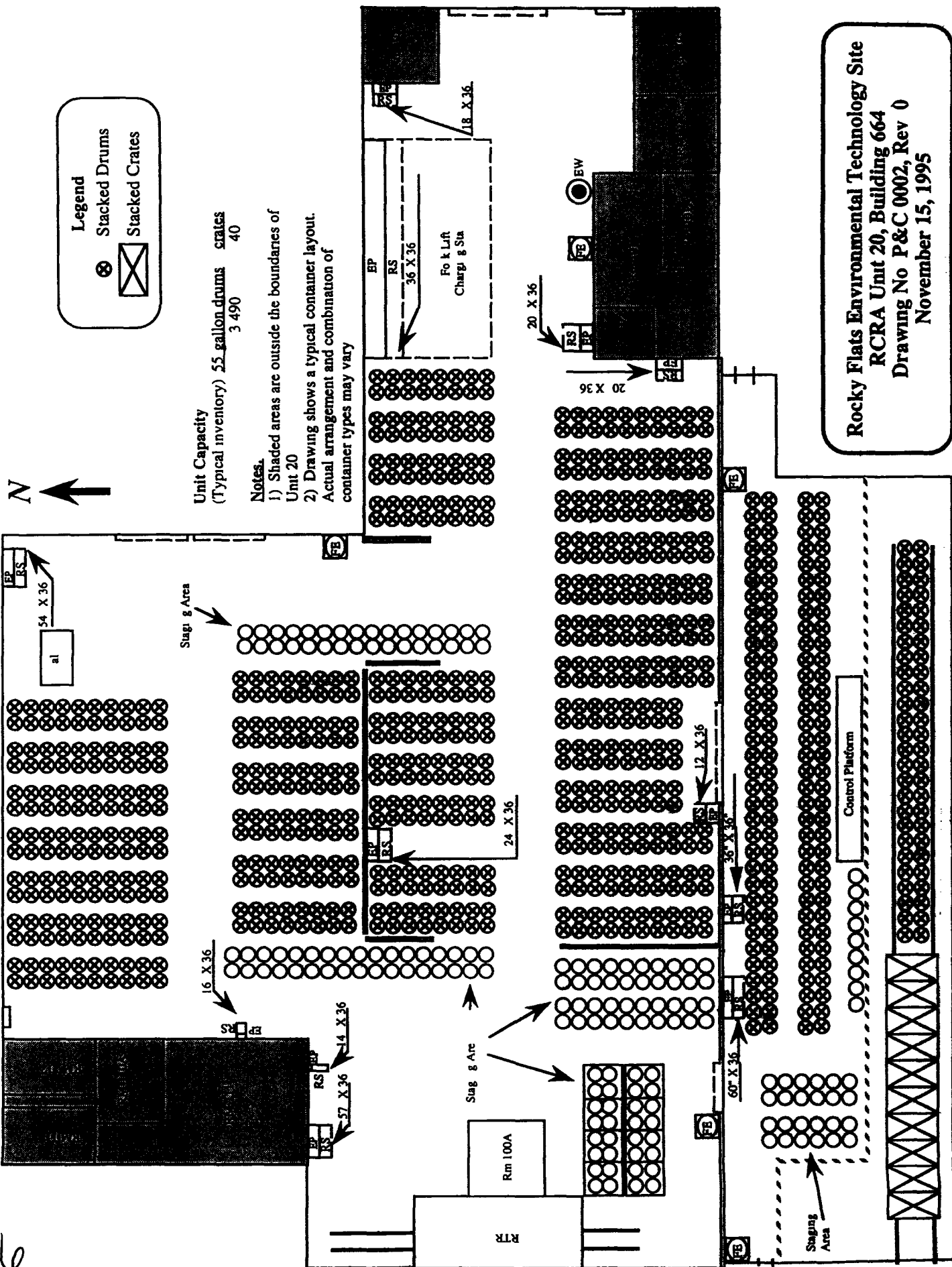
⊗ Stacked Drums

⊠ Stacked Crates

Unit Capacity
(Typical inventory) 55 gallon drums 3 490
crates 40

Notes.

- 1) Shaded areas are outside the boundaries of Unit 20
- 2) Drawing shows a typical container layout. Actual arrangement and combination of container types may vary



Rocky Flats Environmental Technology Site
RCRA Unit 20, Building 664
Drawing No P&C 0002, Rev 0
November 15, 1995

III-27a

UNIT INFORMATION SHEET

10 Unit 21

Unit Description Building 788 is a metal building located on the eastern side of the Protected Area

Maximum Capacity 200 cubic yards (44 000 gallons)
Liquid Capacity 200 gallons

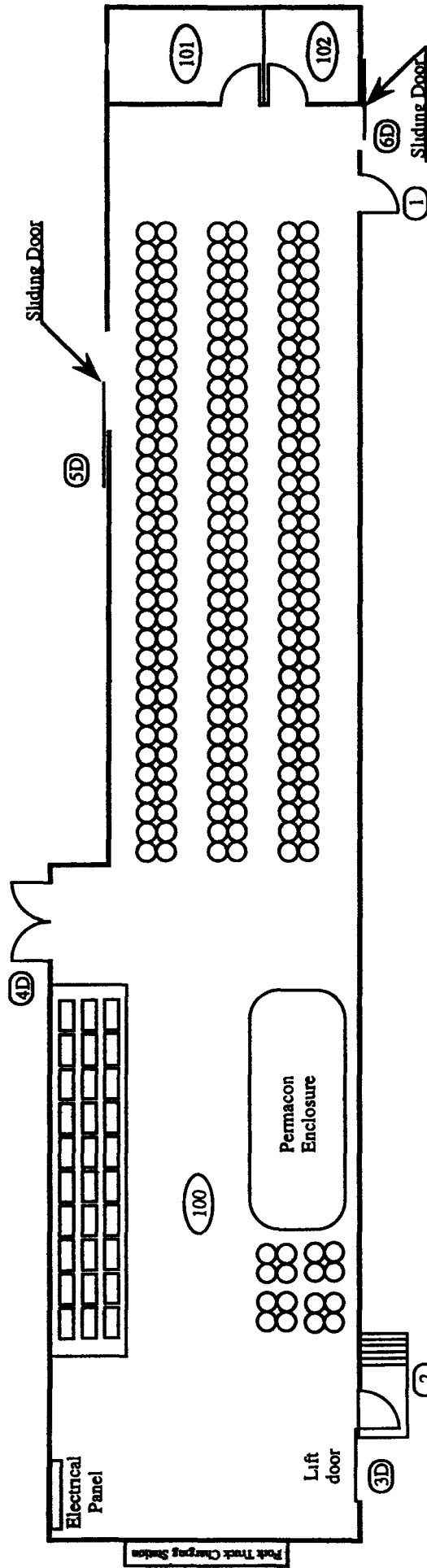
EPA Waste Codes D001 D011 D018 D019 D028 D029 D035 D038 D040
D043 F001 F003 F005 F009

Waste Types Mixed hazardous

Special Unit Conditions

- 1) Secondary containment capable of providing 100% containment for liquids identified in regulated wastes within this unit will be provided as necessary
- 2) A Permacon is located within this unit and will be used for the repackaging of wastes All repackaging operations will be conducted in accordance with an approved procedure

N ←



RCRA UNIT 21
BUILDING 788
CONTAINER STORAGE AREA
ROOMS 100, 101, & 102

Legend
○ Door Numbers
○ Room Numbers

108

III-22a

UNIT INFORMATION SHEET

11 Unit 24

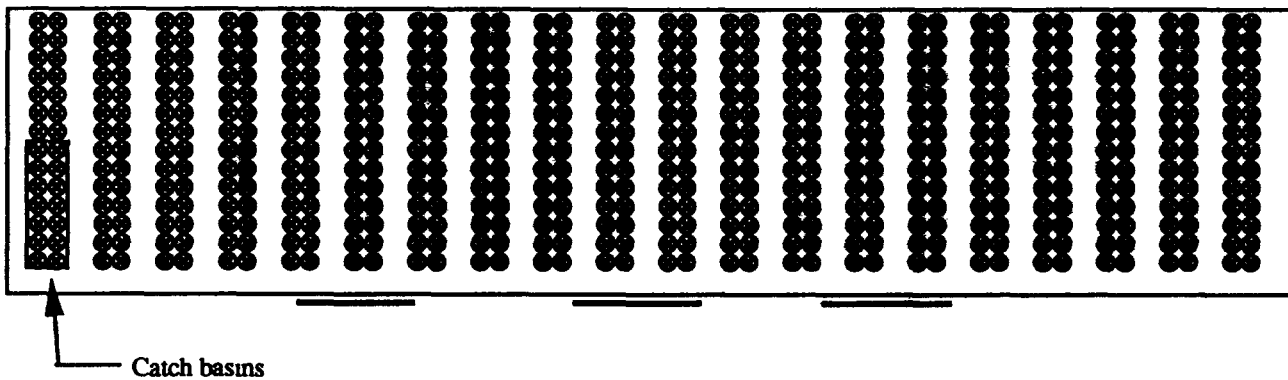
Unit Description	Building 964 is a corrugated metal building located at the east end of the facility
Maximum Capacity	123 200 gallons
Liquid Capacity	None
EPA Waste Codes	D002 D004 D006-D011 F001 F003 F005 F007 F009
Waste Types	Mixed
Special Unit Conditions	None

February 6 1997

III 23

109

**RCRA Unit 24
Container Storage Area
Building 964**



Legend

- Roll up door
- ⊗ Stacked containers

NOTES

- 1) Typical container layout, actual arrangement may vary

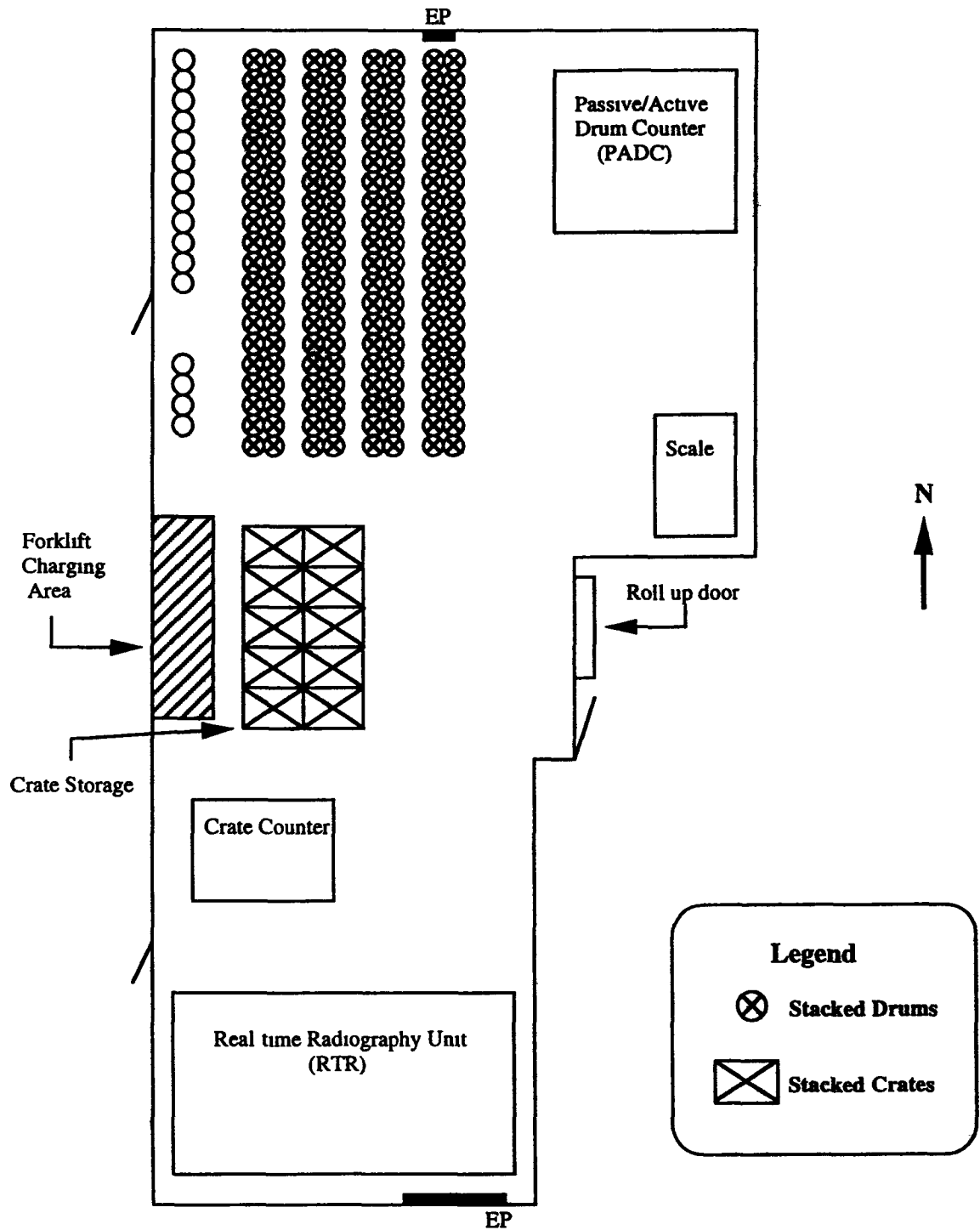
III 23a

UNIT INFORMATION SHEET

12 Unit 59

Unit Description	Building 569 is a metal building located south of Building 561 This unit contains drum and crate assay equipment and a real time radiography unit
Maximum Capacity	35 140 gallons
Liquid Capacity	1 000 gallons
EPA Waste Codes	D001 D012 D015 D019 D021 D029 D033 D035 D040 D043 F001 F003 F005 F009 P011 P012 P014 P015 P022 P028 P029 P045 P062 P076 P087 P098 P101 P104 P106 P113 P119 P121 U002 U004 U019 U031 U037 U041 U042 U044 U055 U057 U067 U071 U074 U075 U077 U079 U080 U084 U098 U102 U107 U108 U112 U120 U123 U127 U131 U133 U134 U138 U144 U148 U151 U154 U158 U162 U165 U167 U169 U170 U188 U190 U191 U196 U201 U207 U209 U211 U213 U220 U225 U227 U228 U236 U239 U246 U328 U353 U359
Waste Types	Mixed
Special Unit Conditions	None

**RCRA Unit 59
Container Storage
Building 569**



NOTES

1) Typical container layout actual arrangement may vary

112

III 24a

UNIT INFORMATION SHEET

13 Unit 371.1

Unit Description Building 371 is located on the northwest end of the facility
This unit has multiple container storage areas which include
rooms gloveboxes and vaults

Maximum Unit Capacity 152 372 gallons
Unit Liquid Capacity 36 972 gallons

Unit EPA Waste Codes See specific waste codes below for each type of container
storage area

Unit Waste Types Mixed hazardous

Container Storage Areas Within This Unit

a Room type areas

The following EPA waste codes apply globally to the room type areas within this
container storage unit The individual rooms that are used for container storage in
this unit follow the listing of the approved EPA waste codes Typical container
arrangement diagrams are provided after the listing of the individual room type areas

EPA Waste Codes D001 D012 D015 D019 D021 D029 D033 D035 D043
F001 F003 F005 F007 F009 F039 P011 P012 P014 P015
P022 P028 P029 P045 P062 P076 P087 P098 P101
P104 P106 P113 P119 P121 U002 U004 U019 U031
U037 U041 U042 U044 U055 U057 U067 U071 U074
U075 U077 U079 U080 U084 U098 U102 U107 U108
U112 U120 U123 U127 U131 U133 U134 U138 U144
U148 U151 U154 U158 U159 U161 U162 U165 U167
U169 U170 U188 U190 U191 U196 U201 U207 U209
U211 U213 U220 U225 U227 U228 U236 U239 U246
U328 U353 U359

Room 1210

Maximum capacity 2 750 gallons
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations

- 1) Waste in containers stored in this area must be compatible with the liquid
waste in the tanks (compatibility code 1A) or elevated above the minimum
identified berm height until such time as the tanks and ancillary equipment
are drained

Room 2202A B and C

February 6 1997

III 25

Maximum capacity	2 420 gallons
Liquid capacity	2 420 gallons
Waste types	LLM TRM Mixed residues
Area limitations	None

Room 2207

Maximum capacity	12 760 gallons
Liquid capacity	N/A
Waste types	TRM Mixed residues
Area limitations	None

Room 2223/2207

Maximum capacity	6 380 gallons
Liquid capacity	N/A
Waste types	TRM Mixed residues
Area limitations	

- 1) Wastes within this area must have a compatibility code of NA
- 2) Containers stored in this area must be elevated or otherwise protected from contact with accumulated liquids

Room 2325

Maximum capacity	11 770 gallons
Liquid capacity	N/A
Waste types	LLM TRM Mixed residues
Area limitations	None

Room 3187B

Maximum capacity	55 gallons
Liquid capacity	55 gallons
Waste types	LLM TRM Mixed residues
Area limitations	None

Room 3189

Maximum capacity	14 520 gallons
Liquid capacity	N/A
Waste types	LLM TRM Mixed residues
Area limitations	None

Room 3206

Maximum capacity	7 260 gallons
Liquid capacity	N/A
Waste types	TRM Mixed residues
Area limitations	None

Room 3321

Maximum capacity	7 425 gallons
Liquid capacity	N/A
Waste types	TRM Mixed residues
Area limitations	None

Room 3341

Maximum capacity	5 115 gallons
Liquid capacity	N/A
Waste types	TRM Mixed residues
Area limitations	None

Room 3420

Maximum capacity	56 100 gallons
Liquid capacity	19 580 gallons
Waste types	LLM TRM Mixed residues
Area limitations	None

Room 3501

Maximum capacity	14 850 gallons
------------------	----------------

Liquid capacity	14 850 gallons
Waste types	TRM Mixed residues
Area limitations	None

b Glovebox type areas

The following EPA waste codes apply globally to the glovebox type areas within this container storage unit. The individual gloveboxes that are used for container storage in this unit follow the listing of the approved EPA waste codes. Typical container arrangement diagrams are provided after the listing of the individual areas.

EPA Waste Codes	D002 D004 D008 D011
-----------------	---------------------

Room 3408 Glovebox 72B and 72C

Maximum capacity	4 gallons (15 liters) for each glovebox
Liquid capacity	Same as maximum capacity
Waste types	LLM TRM Mixed residues
Area limitations	None

Room 3412 Glovebox 48B and 48C

Maximum capacity	GBox 48B 12 gallons (45 liters) GBox 48C 8 gallons (30 liters)
Liquid capacity	Same as maximum capacity
Waste types	LLM TRM Mixed residues
Area limitations	None

Room 3602 Glovebox 1

Maximum capacity	39 gallons (148 liters)
Liquid capacity	39 gallons (148 liters)
Waste types	LLM TRM Mixed residues
Area limitations	None

c Vault type areas

The following EPA waste codes apply globally to vault type areas within this container storage unit. Individual vault type areas that are used for container storage

116

in this unit follow the listing of the approved EPA waste codes Typical container arrangement diagrams are provided after the listing of the individual areas

EPA Waste Codes D003 D011 D018 D019 D035 D040 F001 F003 F005

Room 3202

Maximum capacity 450 gallons
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations

- 1) This area is subject to inspection by remote radiation monitoring In addition a bi monthly inspection of a randomly selected portion of the containers and an annual 100% inspection which is coordinated with routine nuclear material accountability inventories will be conducted

Room 3204

Maximum capacity 830 gallons
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations

- 1) This area is subject to inspection by remote radiation monitoring In addition a bi monthly inspection of a randomly selected portion of the containers and an annual 100% inspection which is coordinated with routine nuclear material accountability inventories will be conducted

Room 3602

Maximum capacity 47 gallons
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations

- 1) This area is subject to inspection by remote radiation monitoring In addition a bi monthly inspection of a randomly selected portion of the containers and an annual 100% inspection which is coordinated with routine nuclear material accountability inventories will be conducted

Room 3606

Maximum capacity 6 810 gallons
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations

- 1) This area is subject to inspection by remote radiation monitoring. In addition a bi monthly inspection of a randomly selected portion of the containers and an annual 100% inspection which is coordinated with routine nuclear material accountability inventories will be conducted
- 2) The containers in this area are stored on shelves and are not in fixed positions however the containers will be placed no more than three deep as indicated in the area drawing

Stacker

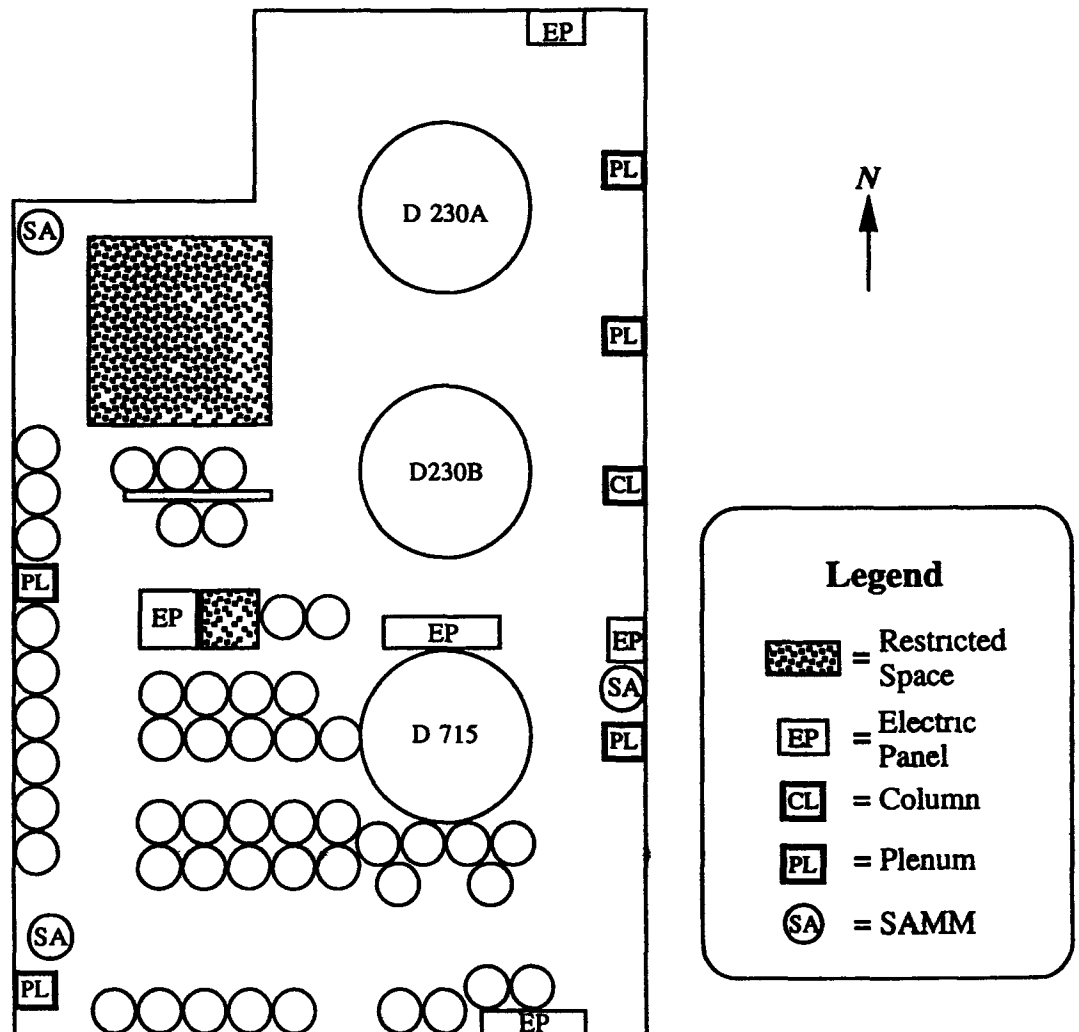
Maximum capacity 2 763 gallons
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations

- 1) The mixed waste containers stored in the Stacker are subject to monthly camera inspections and to bi monthly statistical physical inspections. The annual physical inspection is coordinated with routine nuclear material accountability inventories. It is expected that, over a one year period, up to 5% of the total number of mixed waste containers will be inspected

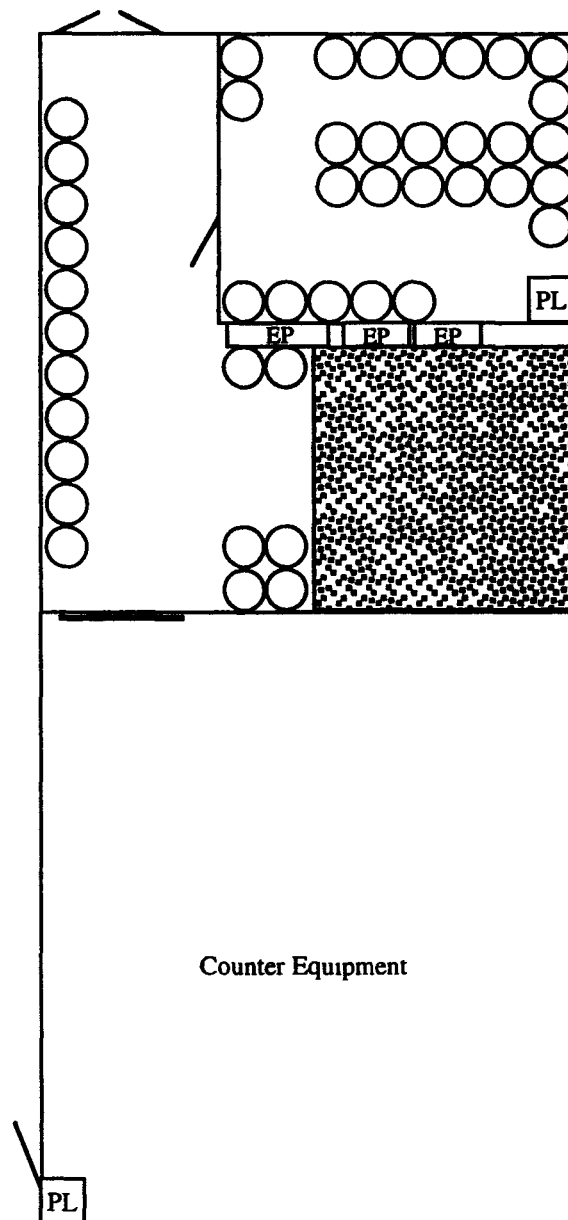
**RCRA Unit 371 1
Room 1210
Container Storage Area
(Room)**







NOTES

- 1) Typical container arrangement actual arrangement may vary
- 2) SAAMs are shown for information only and their locations are subject to change
- 3) Tank D 715 is a Plenum deluge tank for emergency use only Tanks D-230A and D 230B are out-of service utility scrubbers

RCRA Unit 371 1
Room 2202
Container Storage Area
(Room)



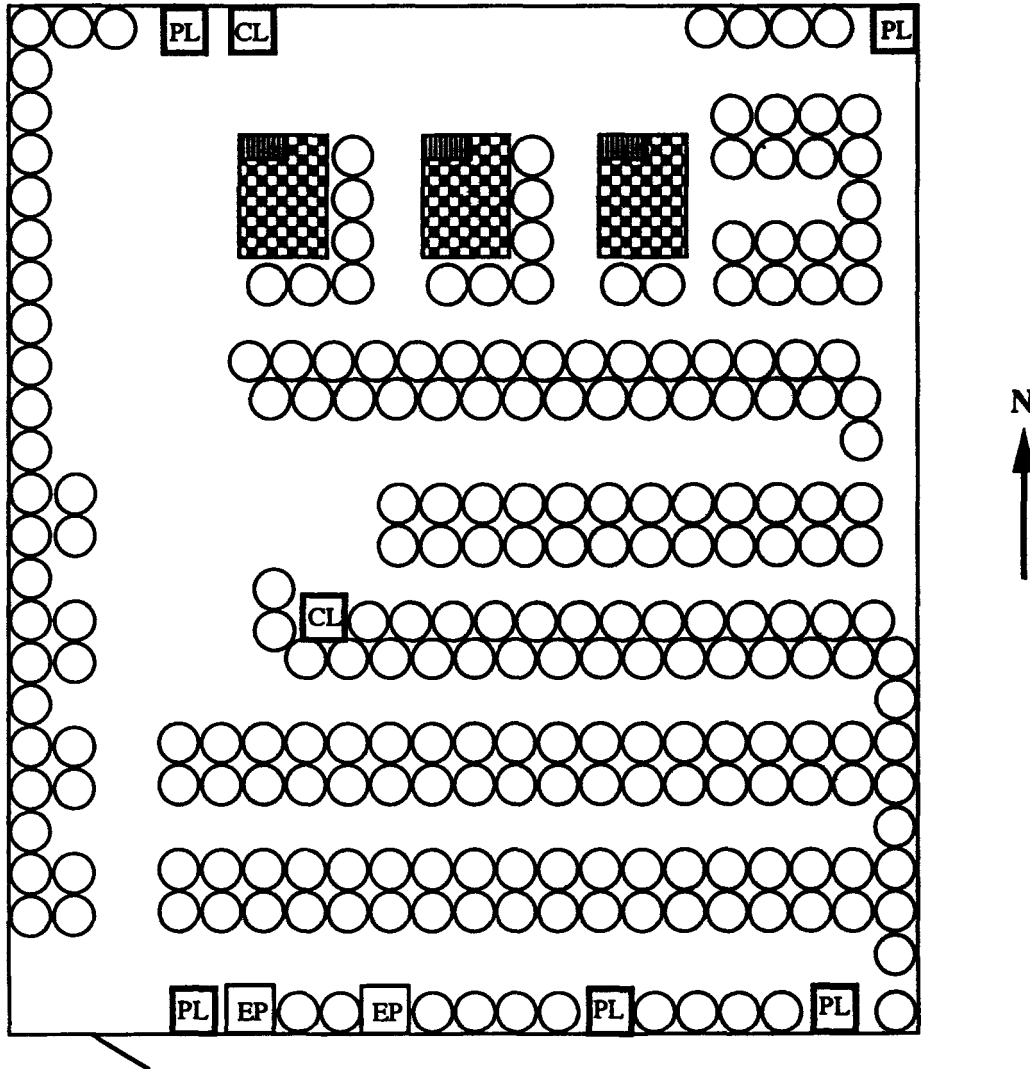
Legend

-  = Restricted Space
-  = Electric Panel
-  = SAMM
-  = Sliding Door

NOTES

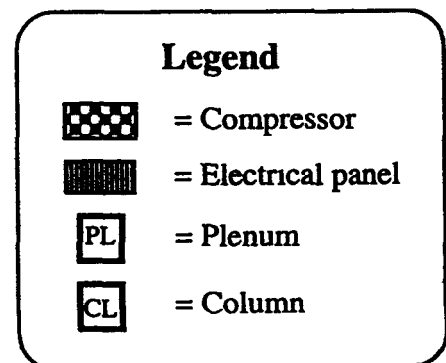
- 1) Typical container layout actual arrangement may vary

RCRA Unit 371 1
Container Storage (Room)
Building 371, Room 2207

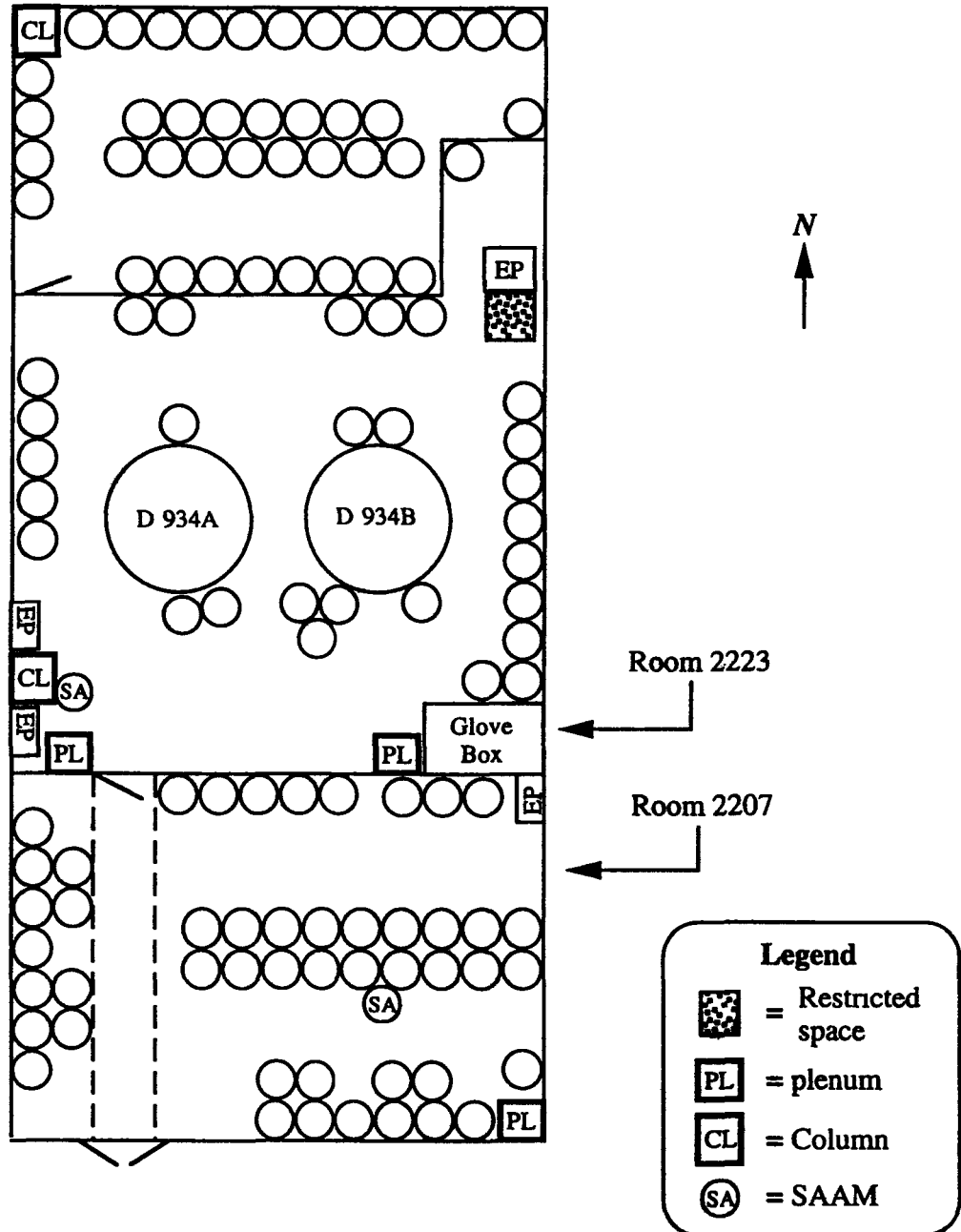


NOTES

- 1) Typical container layout actual arrangement may vary
- 2) SAAM locations are shown for information only and are subject to change



RCRA Unit 371 1
Rooms 2223/2207
Container Storage Area
(Room)

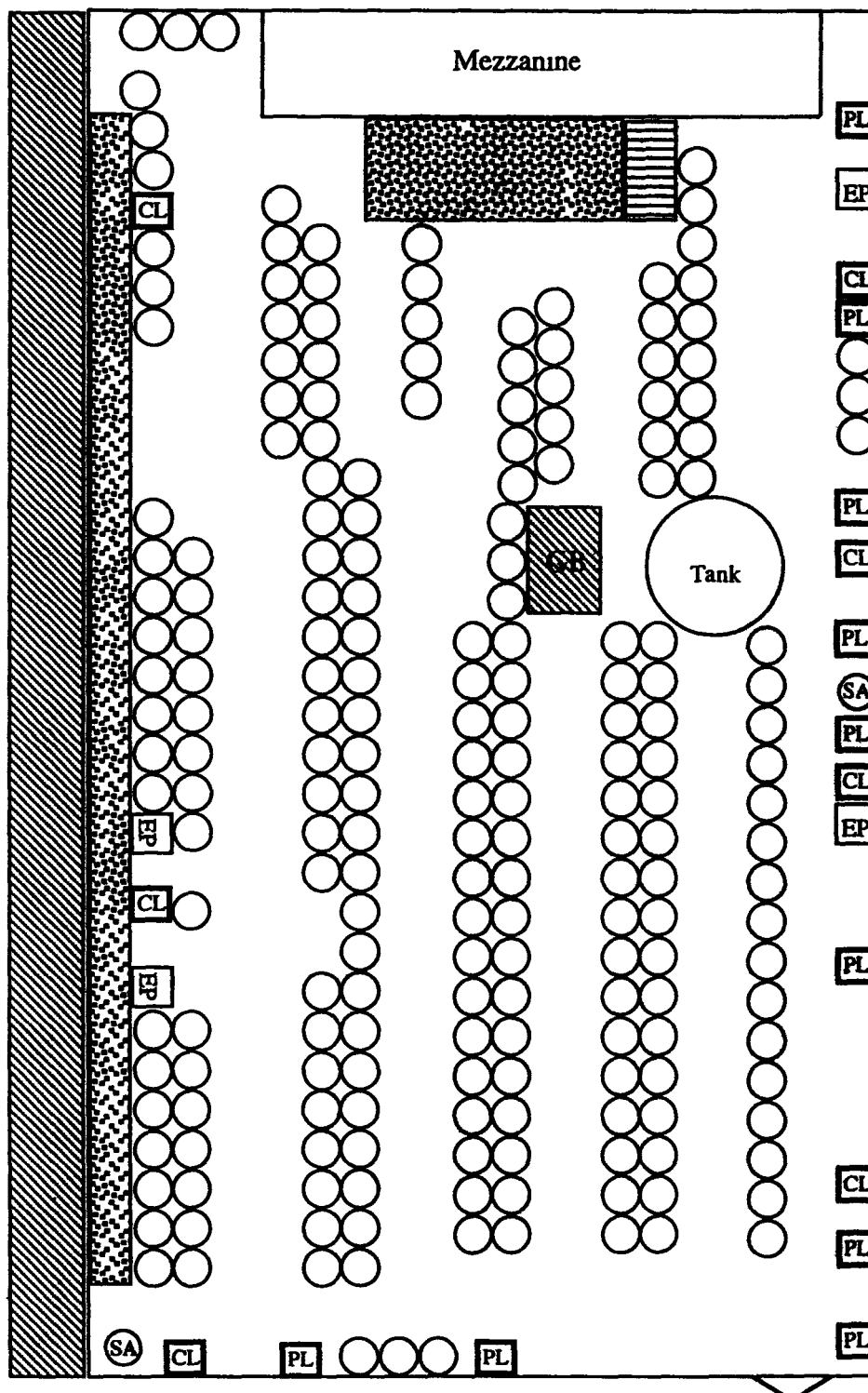


NOTES







- 1) Typical container layout actual arrangement may vary
- 2) SAAM locations are for information only and are subject to change
- 3) No secondary containment calculations are provided since the containers must be solid waste only

122

**RCRA Unit 371 1
Container Storage Area
Room 2325**



Legend

-  = Restricted space
-  = Stairs
-  = Gloveboxes
-  = Column
-  = Plenum
-  = SAMM

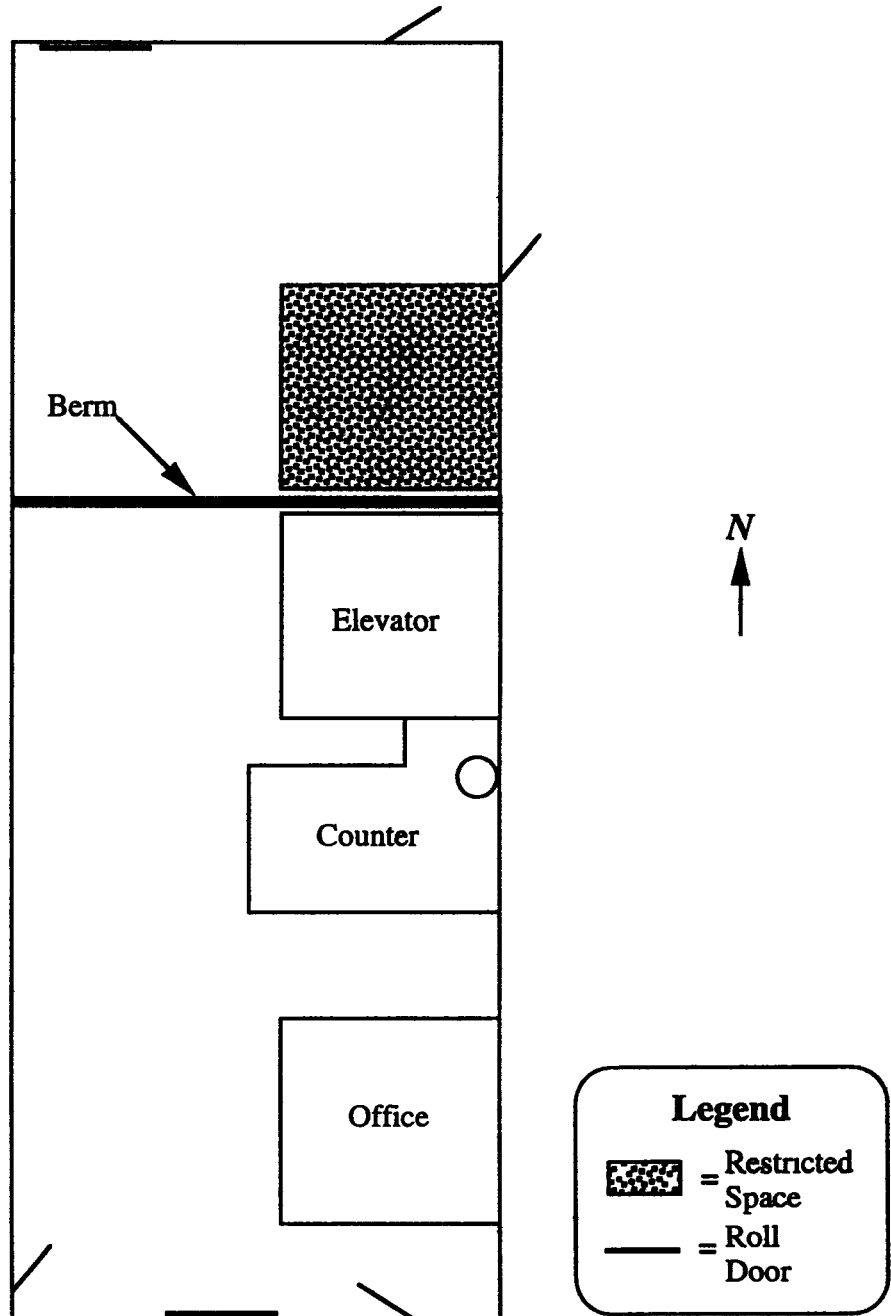
NOTES

- 1) Typical container layout actual arrangement may vary
- 2) SAAM locations are for information only and are subject to change

123

III 30e

**RCRA Unit 371 1
Container Storage Area
Room 3187B**

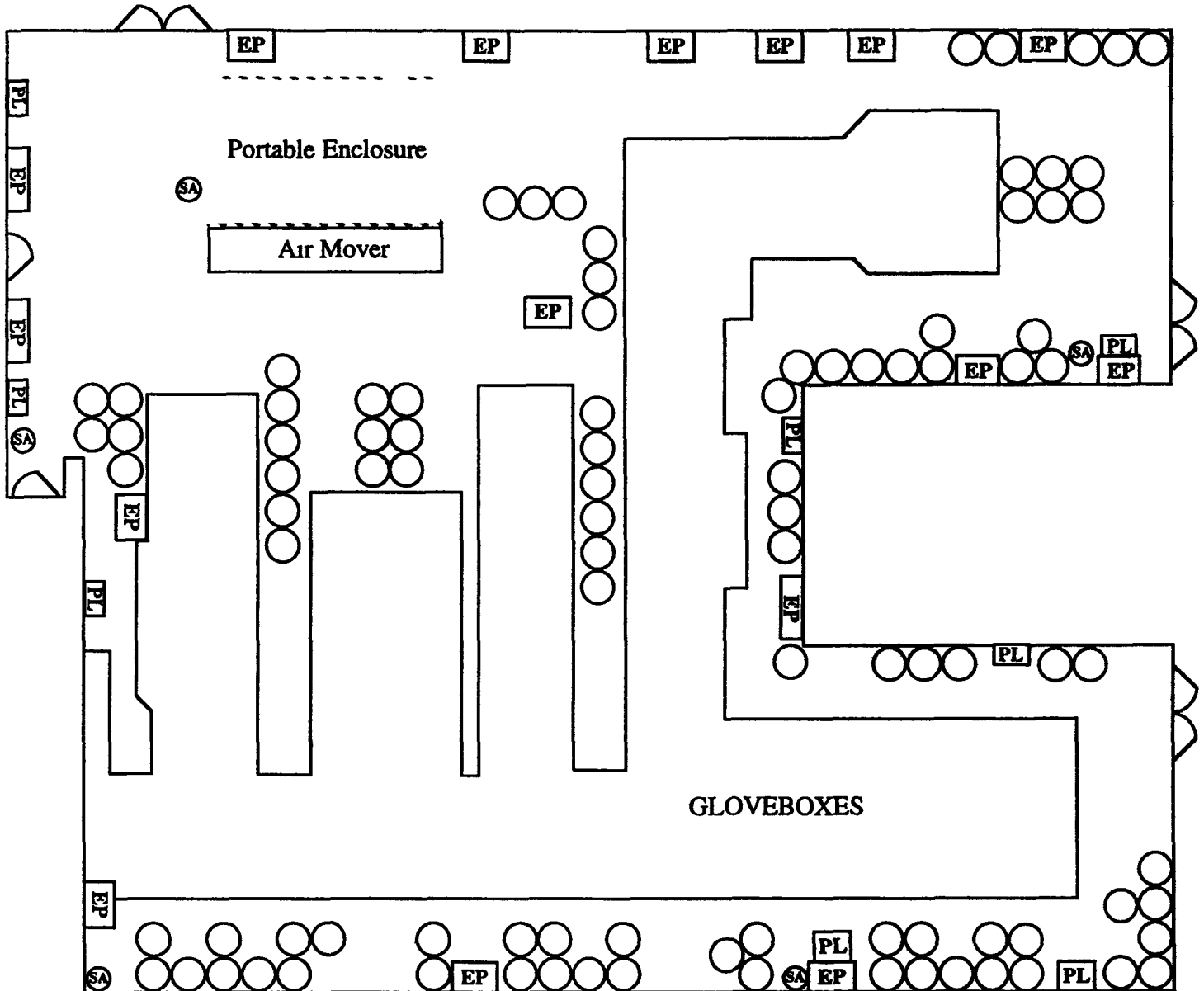


NOTES

- 1) Typical container arrangement actual may vary

124

**RCRA Unit 371 1
Container Storage Area
Room 3206**



NOTES

- 1) Typical container configuration actual may vary
- 2) SAAM locations are for information only and are subject to change

Legend

EP = Electrical Panel

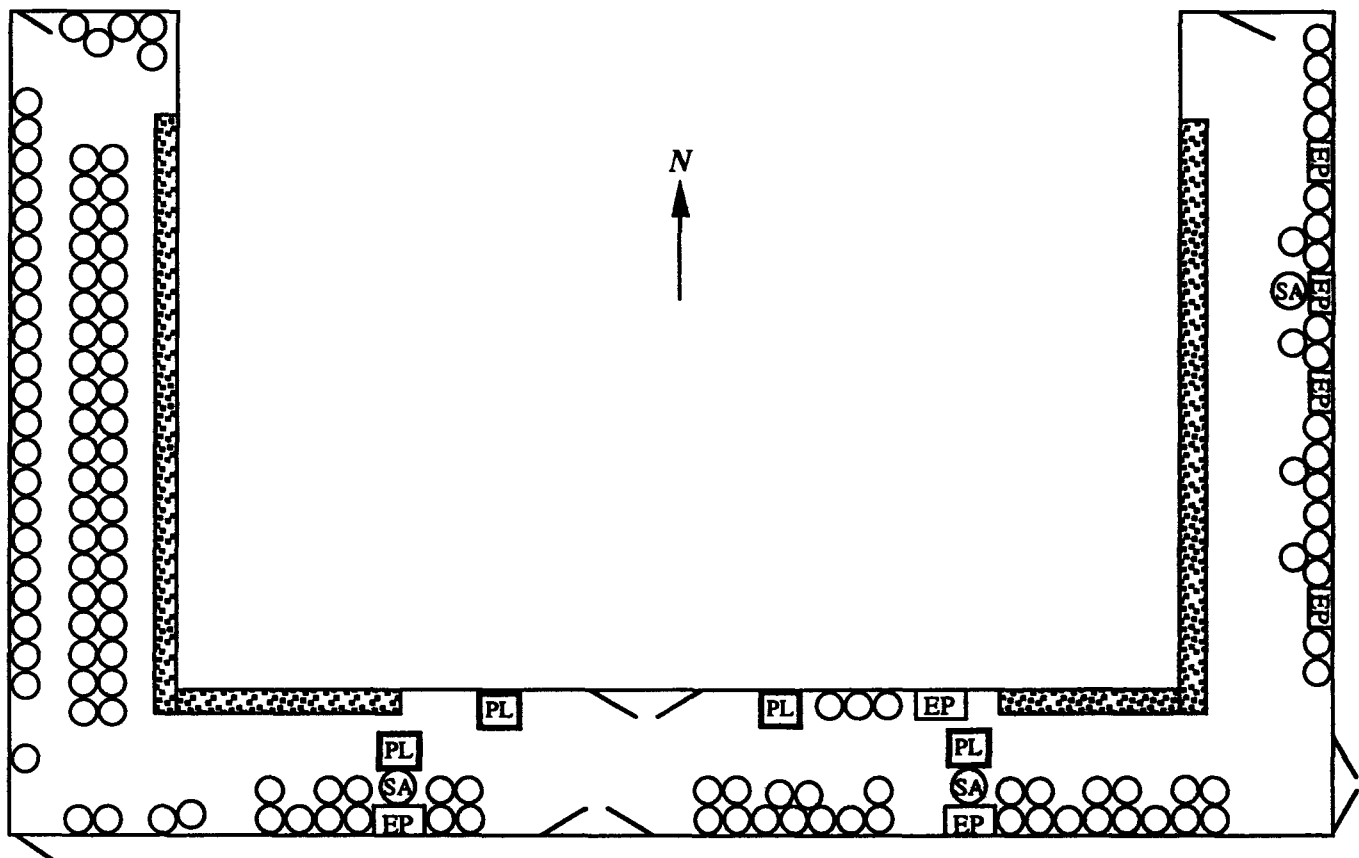
SA = SAAM

PL = Plenum

125

III 309





**Building 371
Container Storage Area
Room 3321**



NOTES

- 1) Typical contain arrangement actual may vary
- 2) SAAM locations are for information only and are subject to change

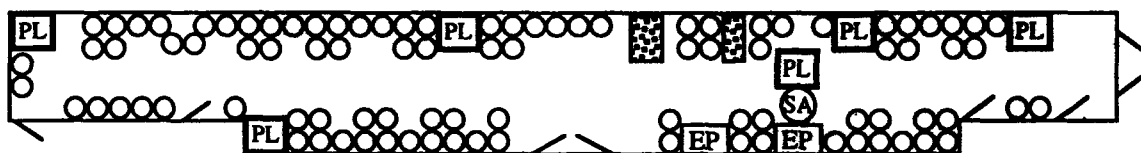
Legend

-  = Restricted space
-  = Electric Panel
-  = Plenum
-  = SAMM

126

III 30h

**RCRA Unit 371 1
Container Storage Area
Room 3341**




NOTES


- 1) Typical container arrangement actual may vary
- 2) SAAM location is provided for information only and is subject to change

Legend

 = Restricted space

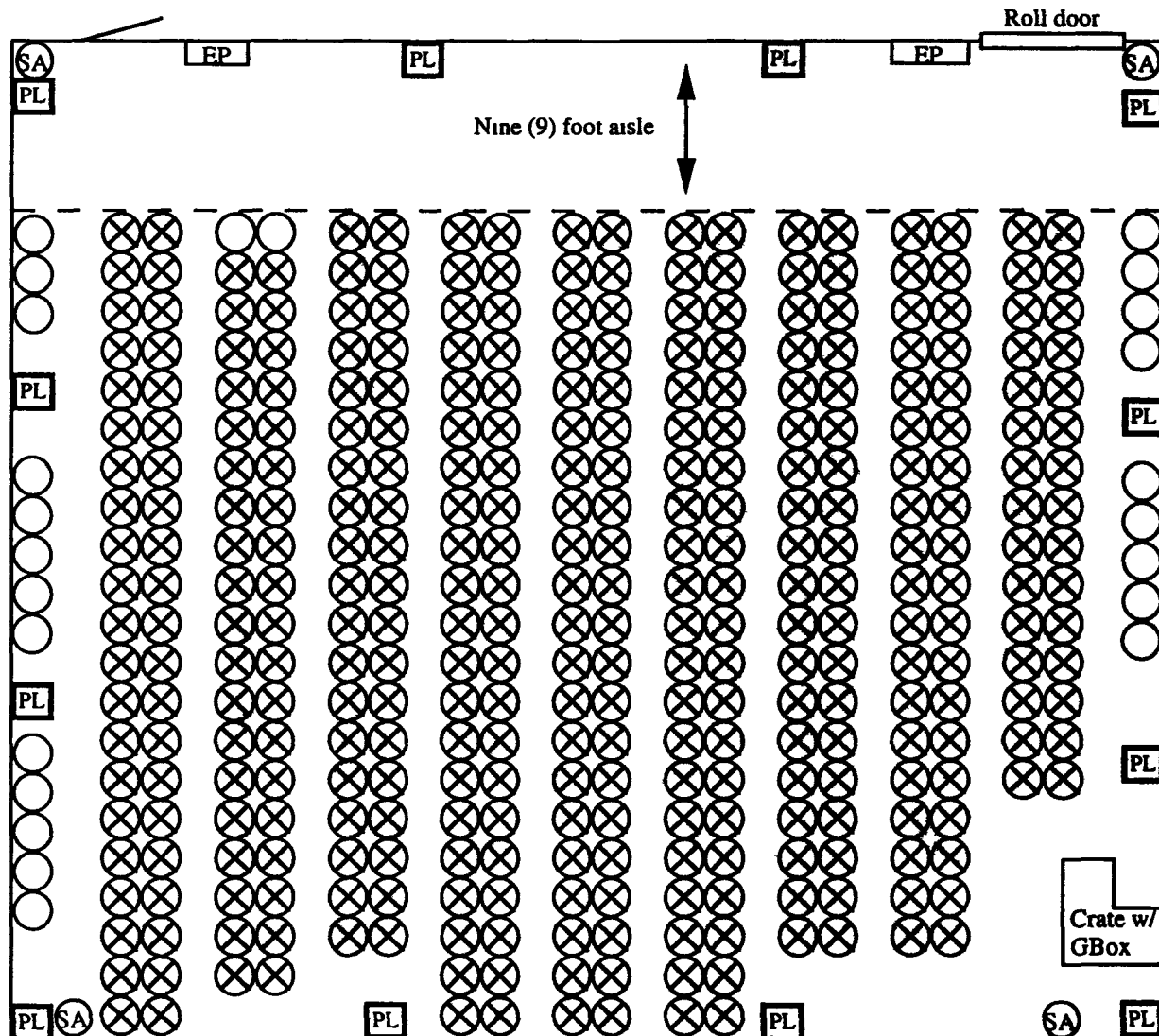
 = Electric Panel

 = Plenum

 = SAMM

127

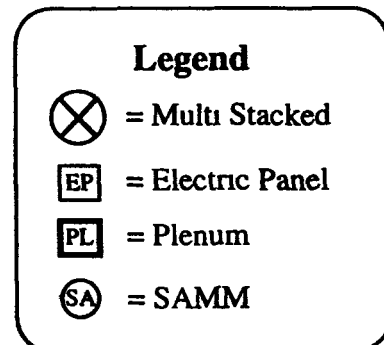
**RCRA Unit 371 1
Container Storage Area
Room 3420**



Secondary containment capability
 Typical inventory = 1020 55 gal drums
 Total surface area = 3238 sf
 Minimum berm height = 1 0 in

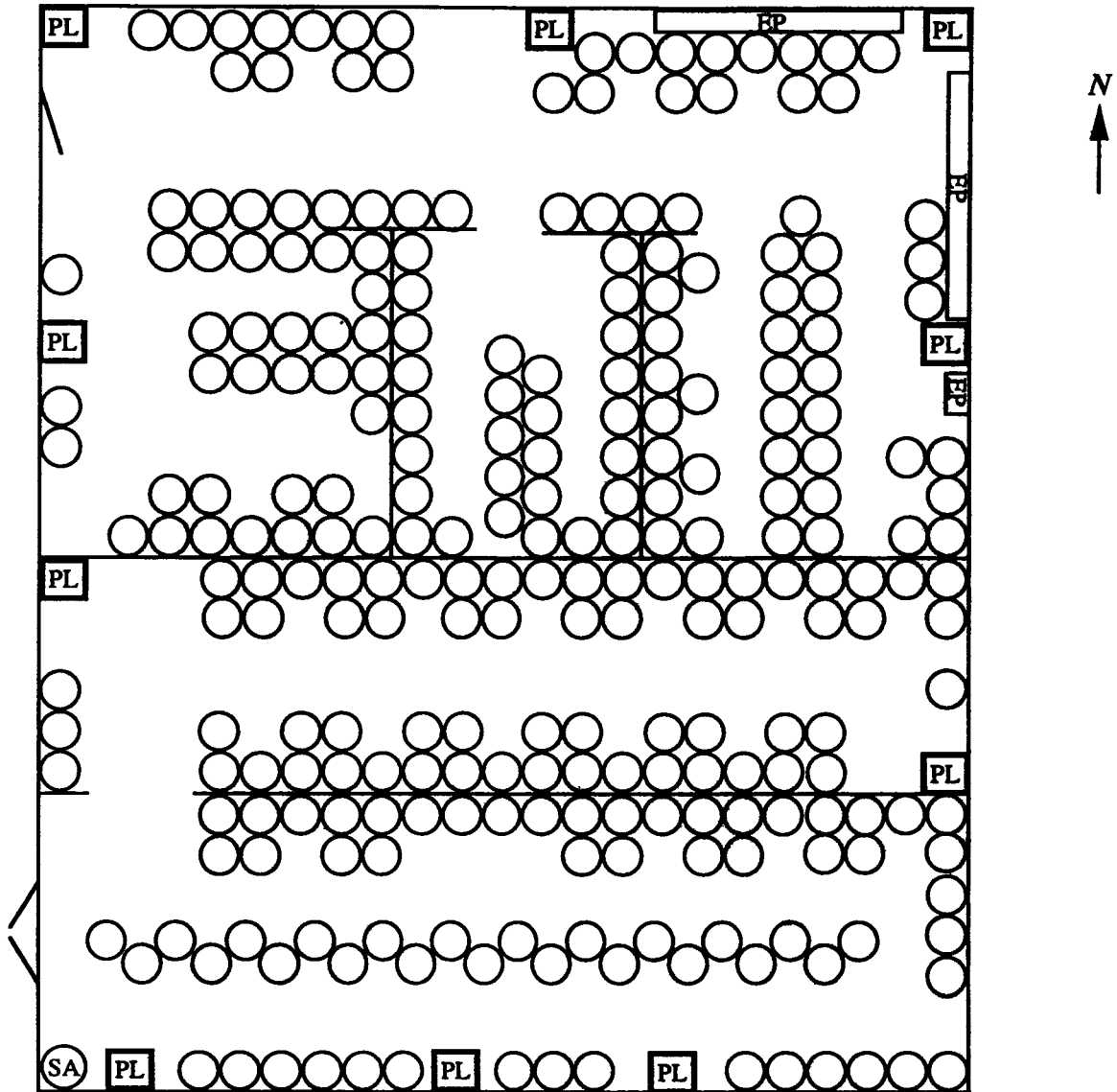
NOTES

- 1) Typical container configuration actual may vary
- 2) SAAM locations are provided for information and are subject to change
- 3) Three high container stacking may take place in this area in all locations



128

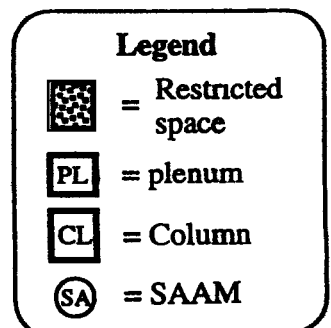
**RCRA Unit 371 1
Container Storage Area
Room 3501**



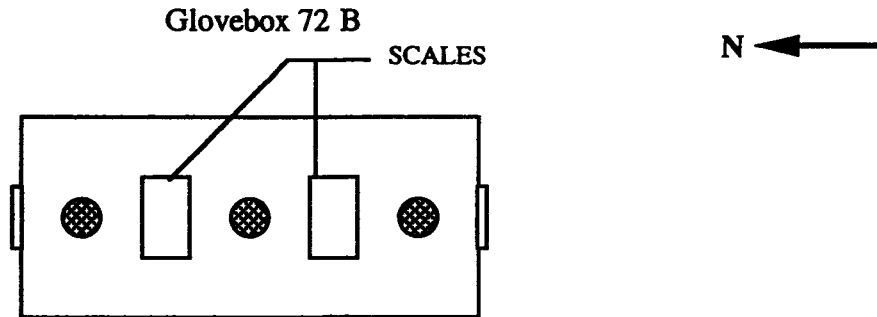
<u>Secondary containment capability.</u>	<u>North</u>	<u>South</u>
Total container inventory =	134	136 (55 gal drums)
Total surface area =	1092 sf	1073 sf
Minimum berm height =	1 1 in	1 2 in

NOTES

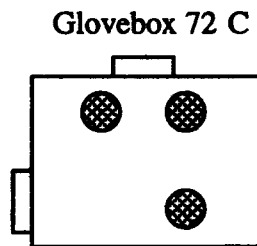
- 1) Typical container layout, actual may vary
- 2) SAAM locations are provided for information and are subject to change



RCRA Unit 371 1
Container Storage Area (Glovebox)
Room 3408, GB 72B and GB 72C



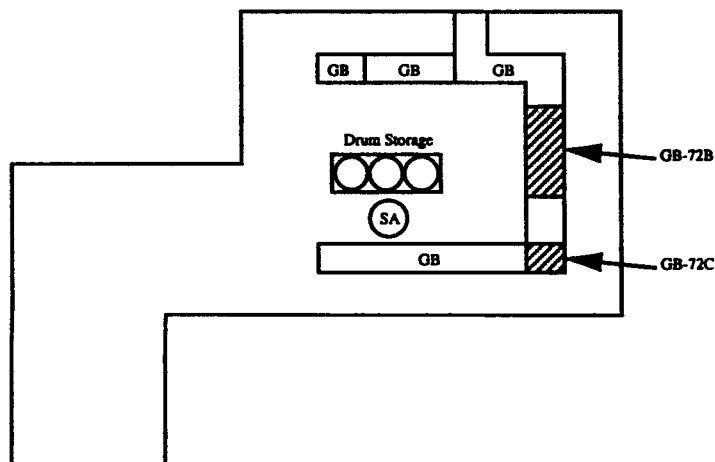
Secondary containment capability
 Typical inventory = 12 liters
 Glovebox area = 13 sf
 Minimum berm height = 0.2 in



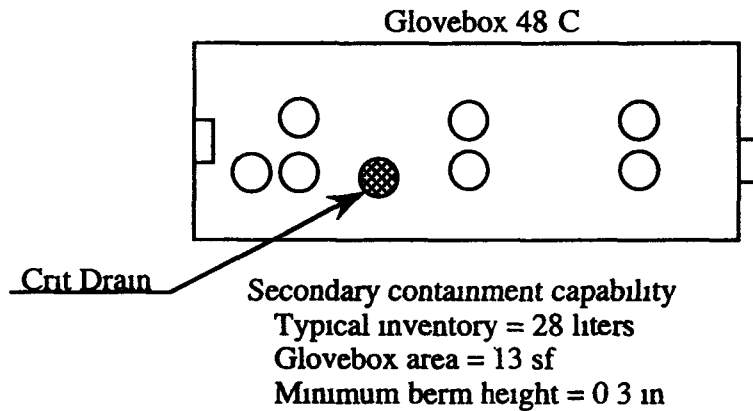
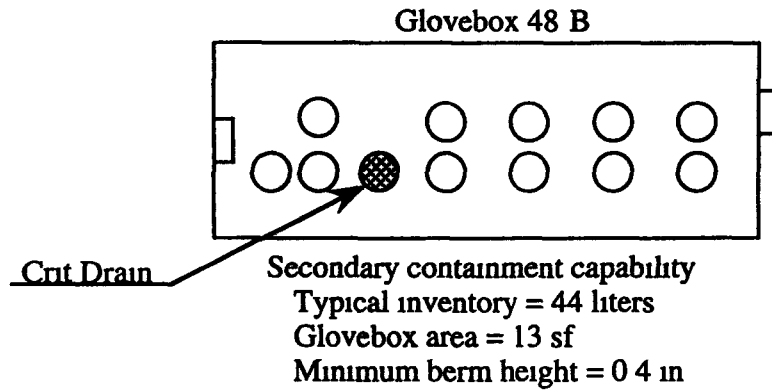
Secondary containment capability
 Typical inventory = 12 liters
 Glovebox area = 3 sf
 Minimum berm height = 0.8 in

NOTES

- 1) Typical container layout actual may vary
- 2) Individual storage locations within the gloveboxes are depicted with ●

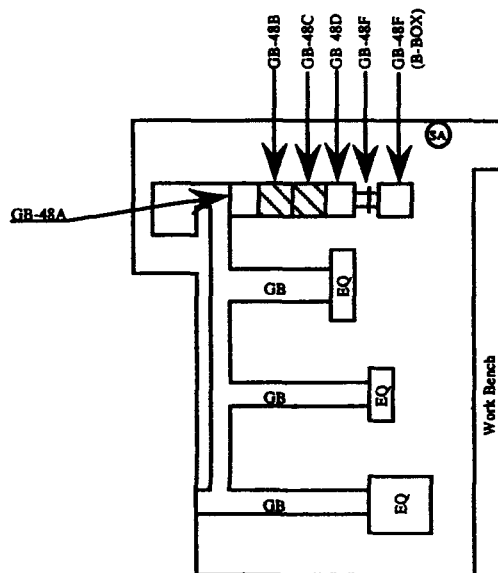


RCRA Unit 371 1
Container Storage Area (Glovebox)
Room 3412, GB 48B and GB-48C



NOTES

- 1) Typical container layout is based on fixed positions in gloveboxes depicted
- 2) In the unlikely event a glovebox criticality drain were to overflow excess liquid would overflow onto the floor of the room



III 30m

131

**RCRA Unit 371 1
Container Storage Area (Glovebox)
Room 3602, GB 1**

N ←

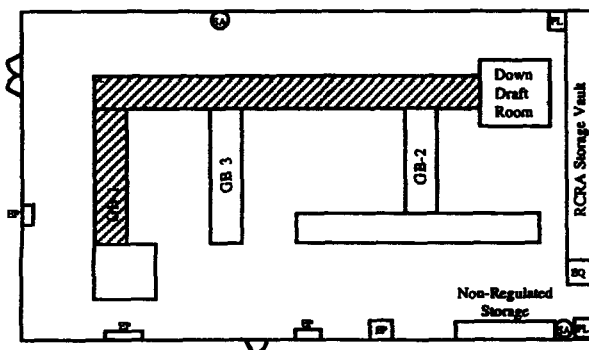
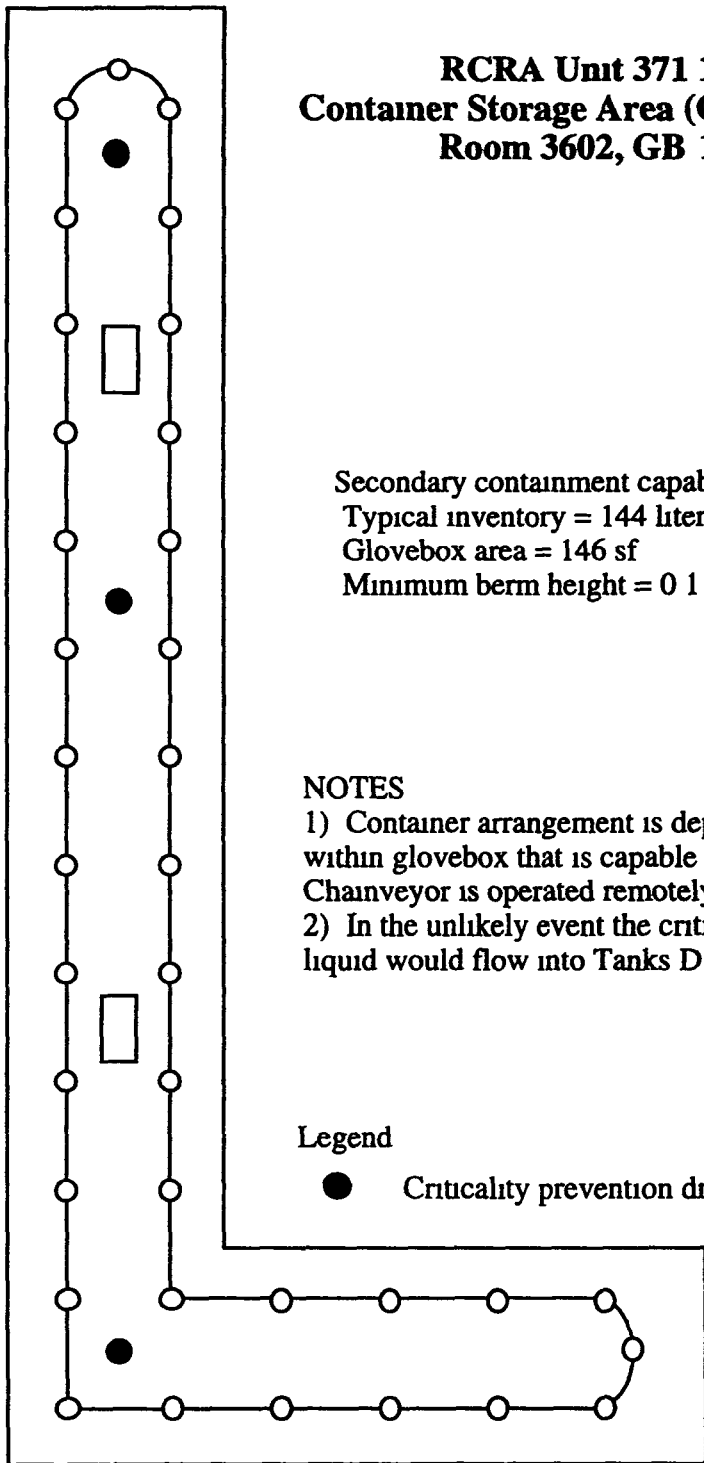
Secondary containment capability
Typical inventory = 144 liters
Glovebox area = 146 sf
Minimum berm height = 0.1 in

NOTES

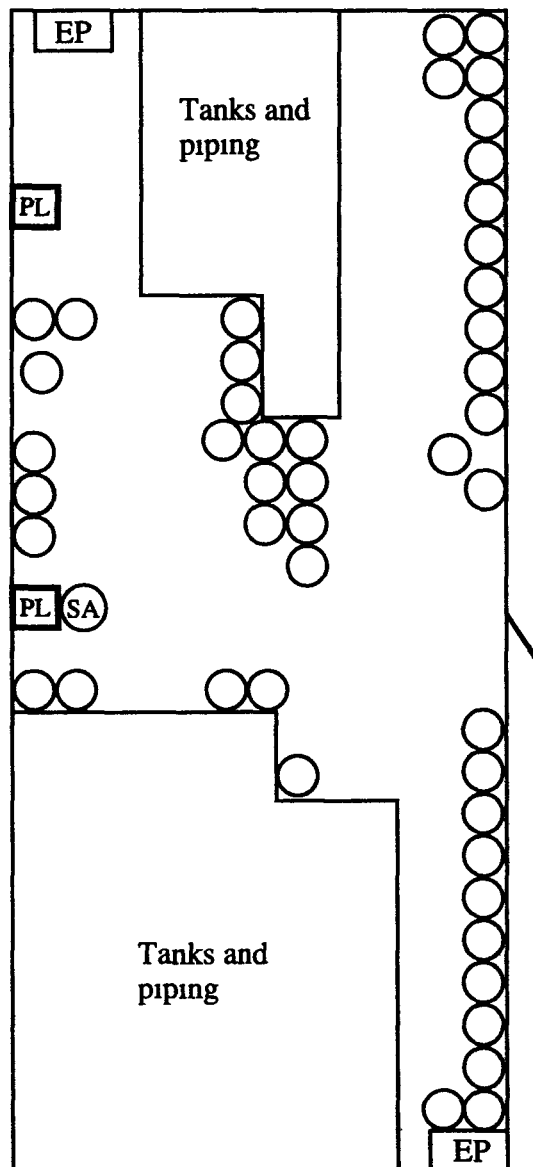
- 1) Container arrangement is dependent on position of chainveyor within glovebox that is capable of holding 36 individual containers
Chainveyor is operated remotely
- 2) In the unlikely event the criticality drain were to overflow excess liquid would flow into Tanks D 934A and/or D 934B

Legend

● Criticality prevention drain



**RCRA Unit 371 1
Container Storage Area
Room 3202**



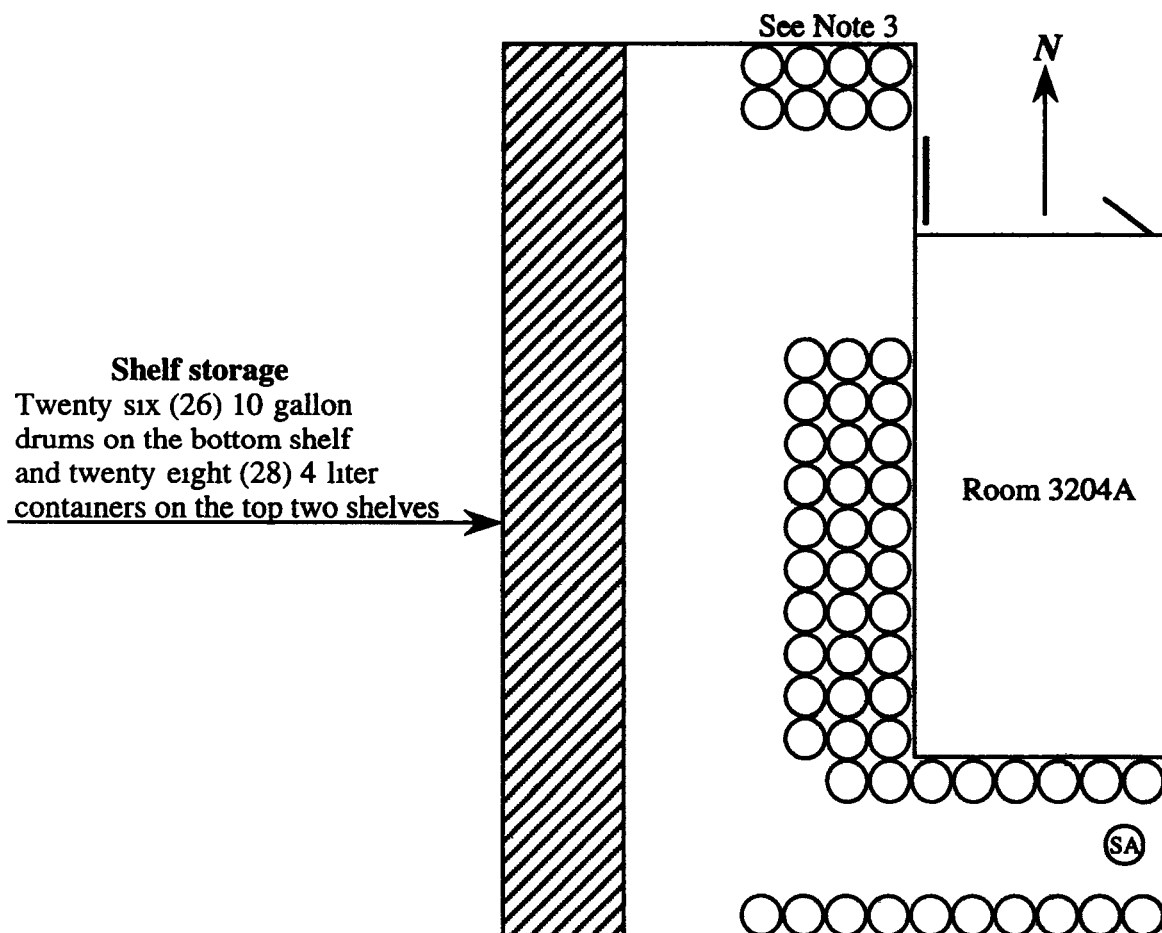
NOTES

- 1) Typical container layout actual may vary
- 2) SAAM location is for information only and is subject to change

Legend

- EP = Electric Panel
- PL = plenum
- CL = Column
- SA = SAAM

RCRA Unit 371 1
Container Storage Area
Room 3204



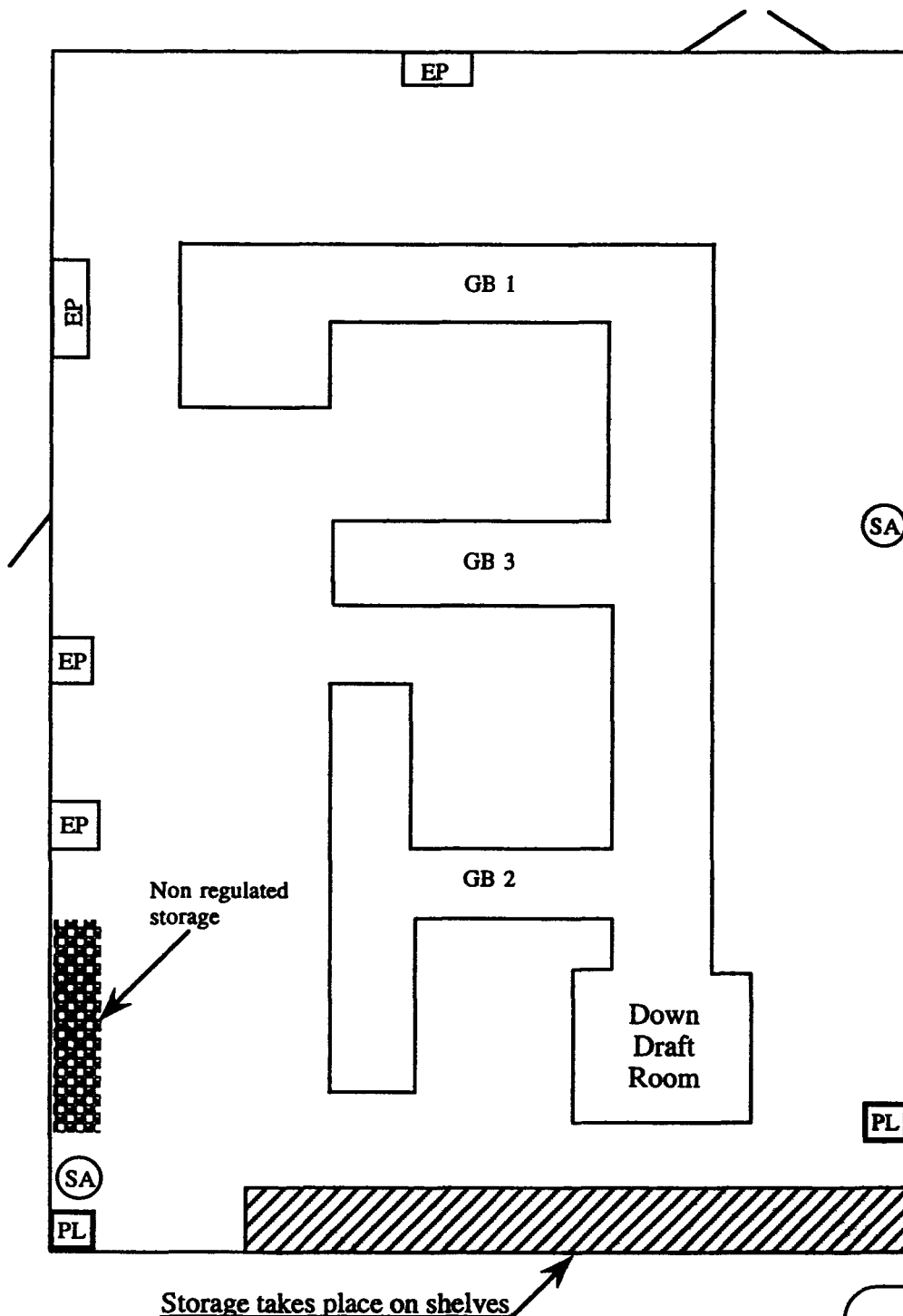
NOTES

- 1) Typical container layout actual may vary
- 2) SAAM location is for information only and is subject to change
- 3) An electrical panel is located above these drums but does not require that any restricted space be maintained around it

Legend

(SA) = SAAM

**RCRA Unit 371 1
Container Storage Area (Vault)
Room 3602**



NOTES

- 1) Each of the two shelves is capable of storing forty four (44) containers spaced 12 center to-center
- 2) SAAM locations are provided for information only and are subject to change

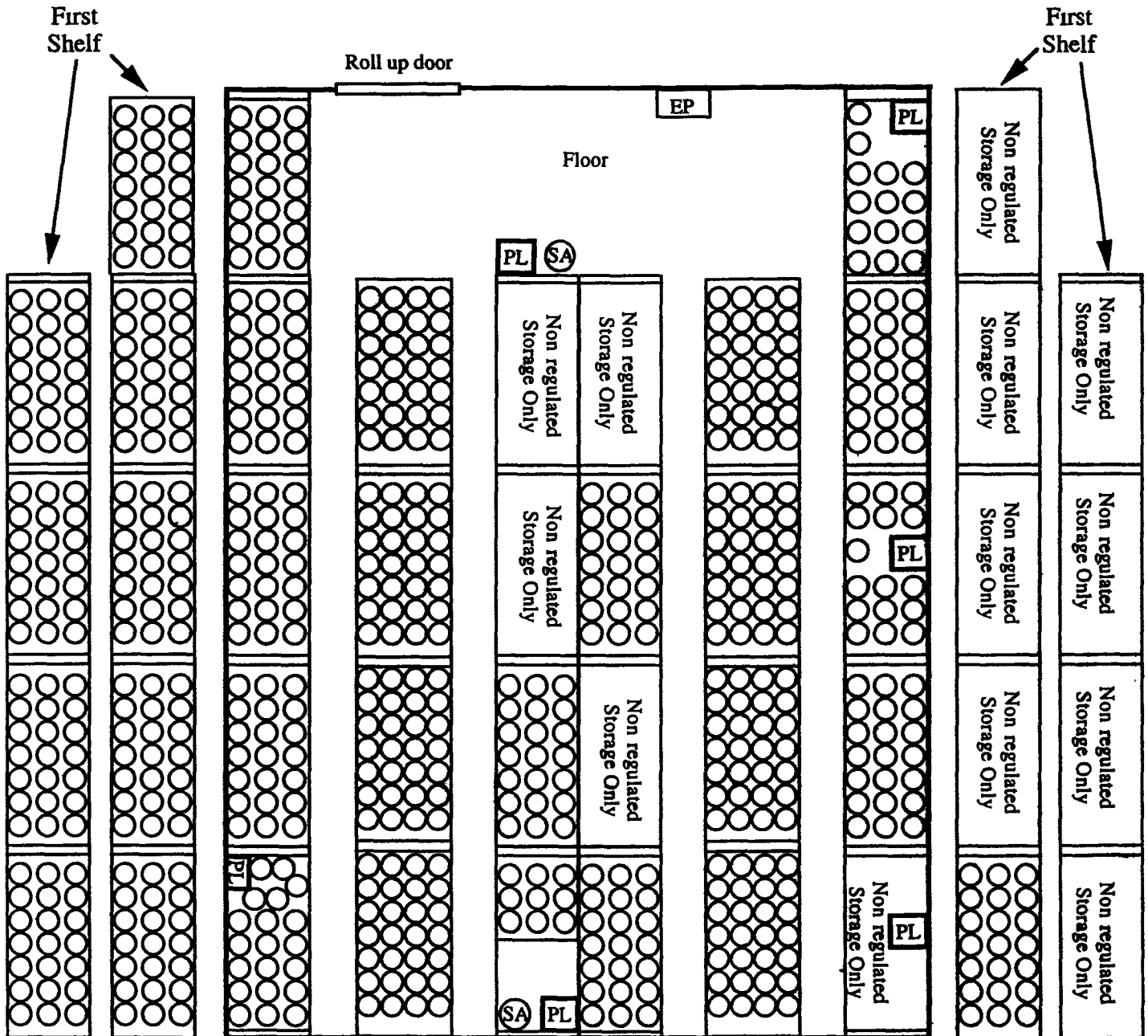
Legend

- EP** = Electric Panel
- PL** = plenum
- CL** = Column
- SA** = SAAM

135

III 30g

**RCRA Unit 371 1
Container Storage Area
Room 3606**



NOTES

- 1) Typical container arrangement actual may vary
- 2) SAAM locations are provided for information and are subject to change

Legend

EP = Electric Panel

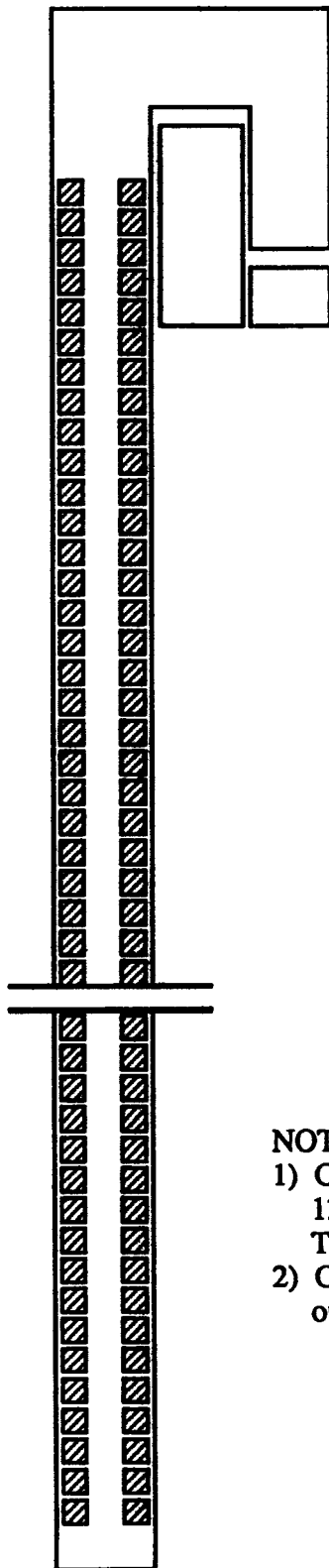
PL = plenum

SA = SAAM

III 30r

136

**RCRA Unit 371.1
Container Storage Area
(Vault)Stacker**



NOTES

- 1) Containers are stored within bins in this area There are 1300 bins capable of holding eight (8) one-liter cans each
Total container volume is 10 400 cans
- 2) Containers are introduced into the Stacker through input/output stations located along its length

UNIT INFORMATION SHEET

14 Unit 374.1

Unit Description

Building 374 is located on the northwest end of the facility adjacent to Building 371. Room 3813 is the only area within this unit designated for container storage.

Maximum Capacity

50 704 gallons

Liquid Capacity

9 900 gallons

EPA Waste Codes

D001 D011 D018 D019 D028 D029 D035 D038 D040
D043 F001 F003 F005 F009

Waste Types

Mixed

Special Unit Conditions

None

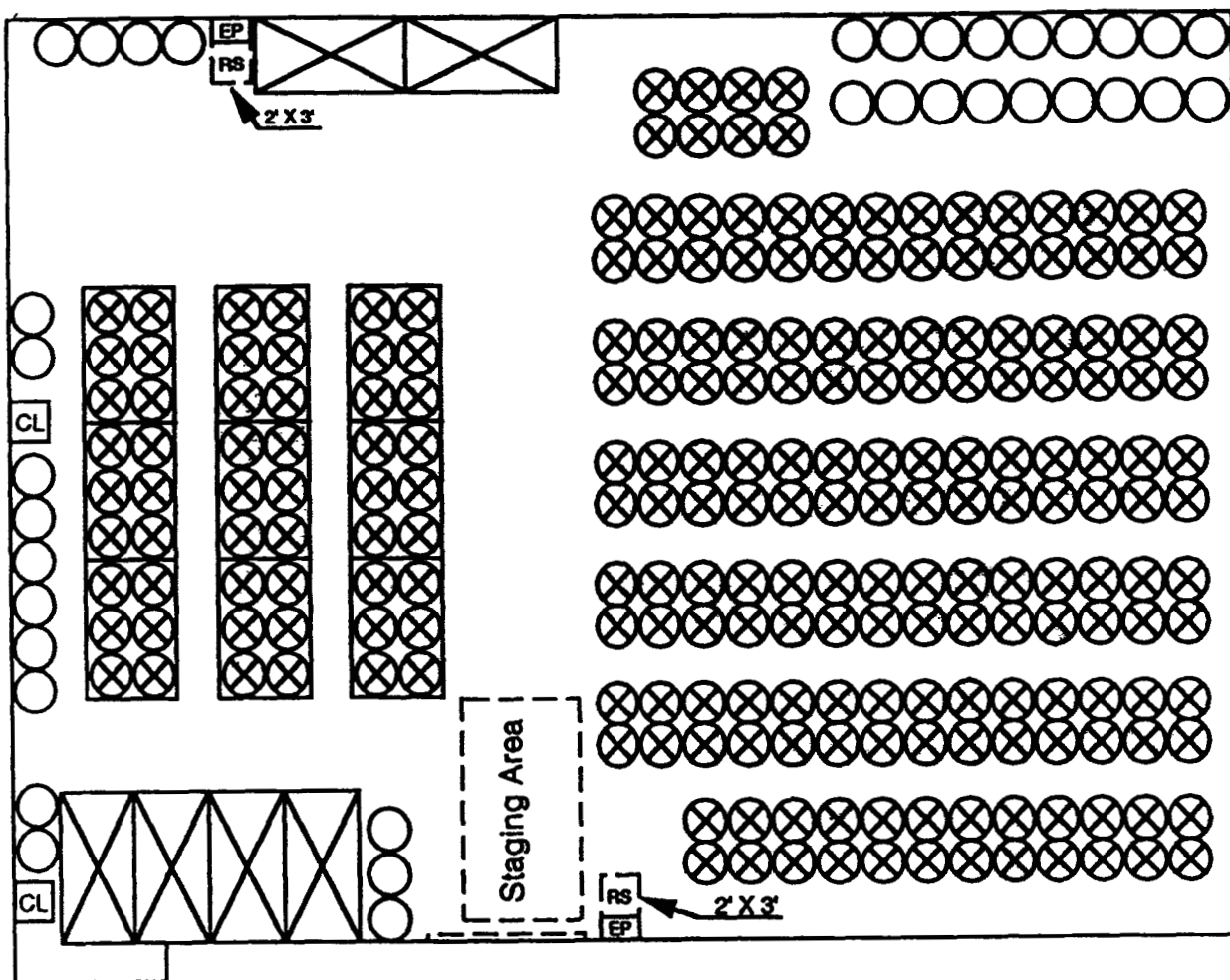
Unit Capacity
(Typical Inventory)

55-gallon drums
713

crates
12

Note.

1) Drawing shows a typical
container layout. Actual
arrangement and combination of
container types may vary



Rocky Flats Environmental Technology Site
UNIT ID 374 1
Building 374 Rm 3813
Drawing No P&C 0001 Rev 0
November 15, 1995

139

III-31a

UNIT INFORMATION SHEET

15 Unit 440.1

Unit Description

Building 440 is a metal building located on the south side of the facility. This building is used as a staging area for the shipment of hazardous and low level mixed waste. Container storage takes place in Rooms 105 and 114 in this building.

Maximum Capacity Liquid Capacity

2 275 cubic yards (456 500 gallons)
N/A

EPA Waste Codes

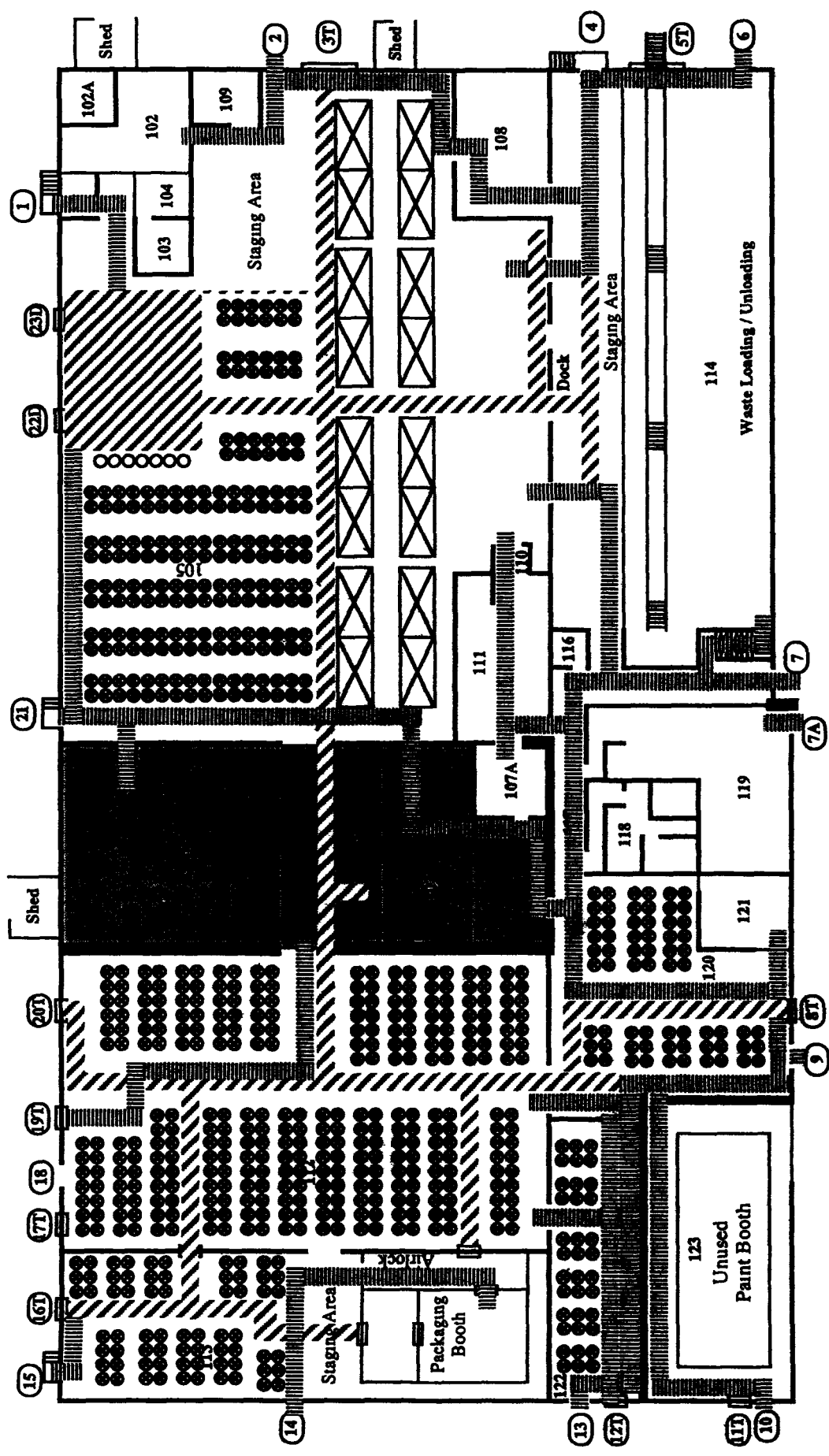
D001 D012 D015 D019 D021 D029 D030 D033 D035
D043 F001 F003 F005 F009 F027 P002 P005 P010-P012
P014 P016 P018 P022, P024 P027 P030 P045 P048 P050
P051 P059 P062 P063 P074 P076 P077 P087 P089
P092 P093 P098 P101 P104 P106 P108 P113 P116 P119
P120 P121 P123 U002 U004 U007 U009 U012 U018
U019 U022 U027 U028 U030 U031 U034 U036 U037
U041 U044 U047 U048 U050 U052 U053 U055 U057
U060 U061 U063 U067 U075 U077 U084 U088 U098
U101 U103 U105 U108 U112 U113 U116 U118 U120
U121 U122 U123 U127 U131 U134 U137 U138 U140
U144 U145 U147 U148 U151 U154 U159 U161 U162
U165 U166 U167 U169 U170 U173 U179 U188 U190
U191 U196 U197 U201 U202 U204 U207 U211 U213
U222 U225 U228 U235 U236 U238 U240 U246 U247
U328 U353 U359

Waste Types

Mixed Hazardous

Special Unit Conditions

None



**FIGURE 1
BUILDING 440
FLOOR PLAN**

Legend

○	= Door Numbers	■	= Buffer area to segregate TRU Waste from combustible containers (ie, wooden boxes)
▤	= Roll-up Door	▨	= Egress Routes
●	= Stacked Drum	▧	= Equipment Handling Paths
○	= Single Layer Drums	⊗	= Stacked Crate

III-32a

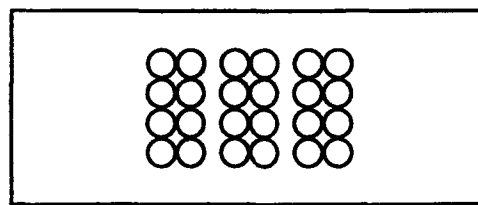
UNIT INFORMATION SHEET

16 Unit 559.1

Unit Description	Building 559 is a laboratory located west of Building 707 Container storage occurs in Glovebox C 17 in Room 102 in this building
Maximum Unit Capacity	26 gallons (99 liters)
Unit Liquid Capacity	26 gallons (99 liters)
Unit EPA Waste Codes	D002 D004 D008 D011
Unit Waste Types	Mixed (residues)
Special Unit Conditions	None

142

**RCRA Unit 559 1
Container Storage Area
(Glovebox)
Building 559, Room 102**



GBox C 17



Secondary containment capability.

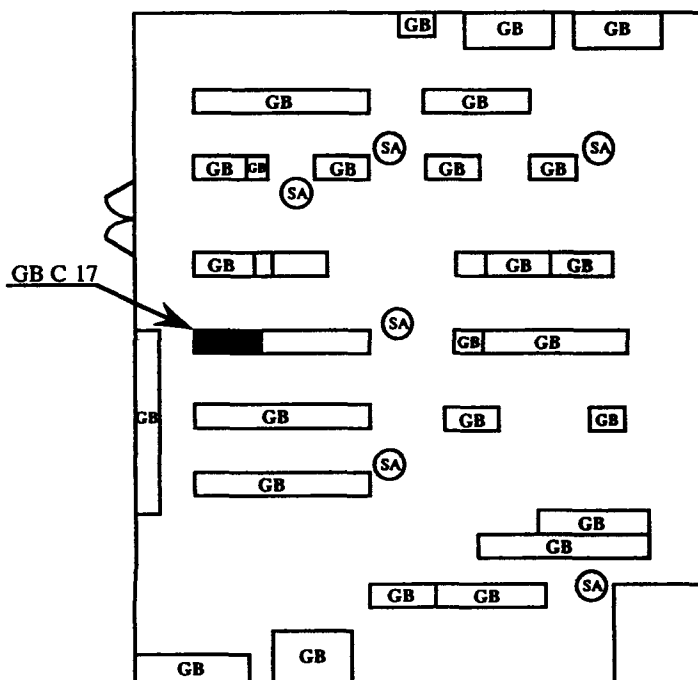
Typical inventory = 24 4-liter containers

Total surface area = 40 sf

Minimum berm height = 0.2 in

NOTES

- 1) Typical container layout actual arrangement may vary



UNIT INFORMATION SHEET

17 Unit 707.1

Unit Description	Building 707 is located north of Central Avenue in the center of the facility
Maximum Unit Capacity	9 113 gallons
Unit Liquid Capacity	1 650 gallons
Unit EPA Waste Codes	D001 D012 D015 D019 D021 D029 D033 D035 D038 D040-D043 F001 F003 F005 F007 F009 U227
Unit Waste Types	Hazardous LLM TRM Mixed residues
Special Unit Conditions	

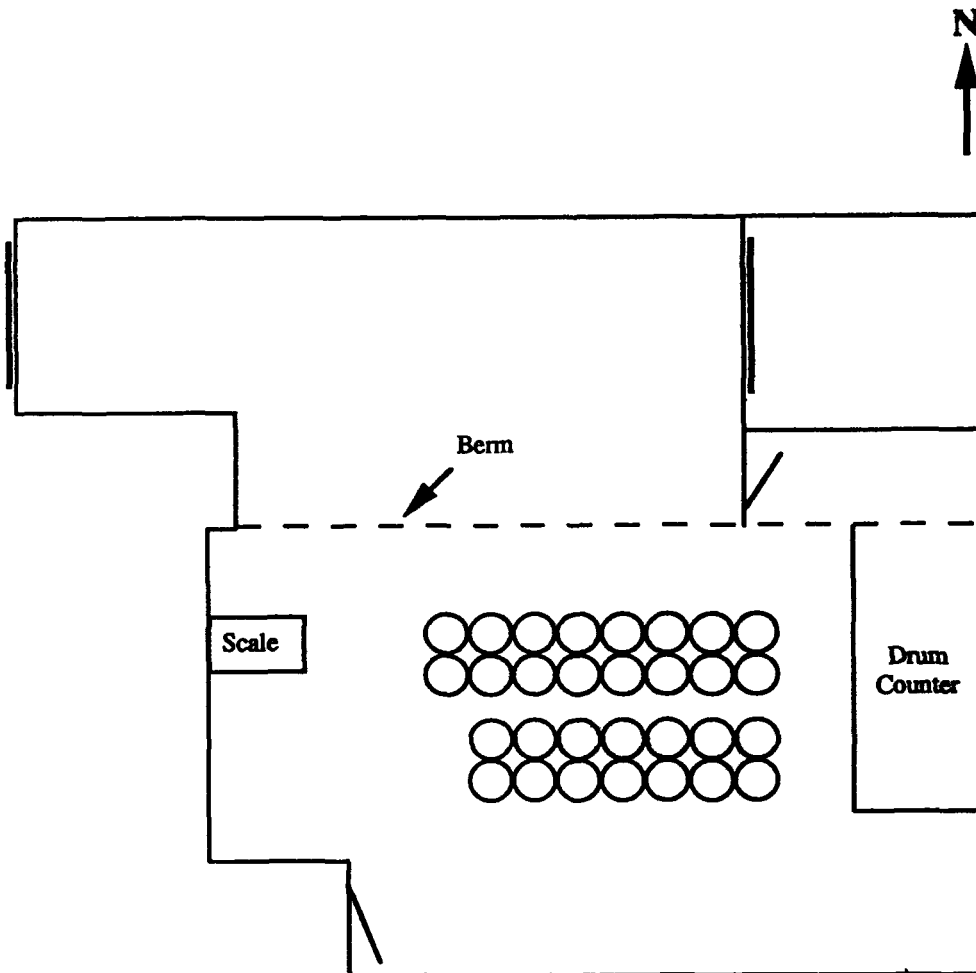
- 1) Staging of containers may occur in the C Cell or other areas within Module A that are identified in accordance with Part III B 17
- 2) Catch basins and/or the building floor and berm in Room 196 may be used as secondary containment

February 6 1997

III 34

144

**RCRA Unit 707 1
Container Storage Area
Building 707, Room 196**



Secondary containment capability
Typical inventory = 30 55 gallon drums
Total surface area = 861 sf
Minimum berm height = 0 4 in

Legend.
— Roll up door

NOTES

- 1) Typical container layout, actual arrangement may vary

III 34a

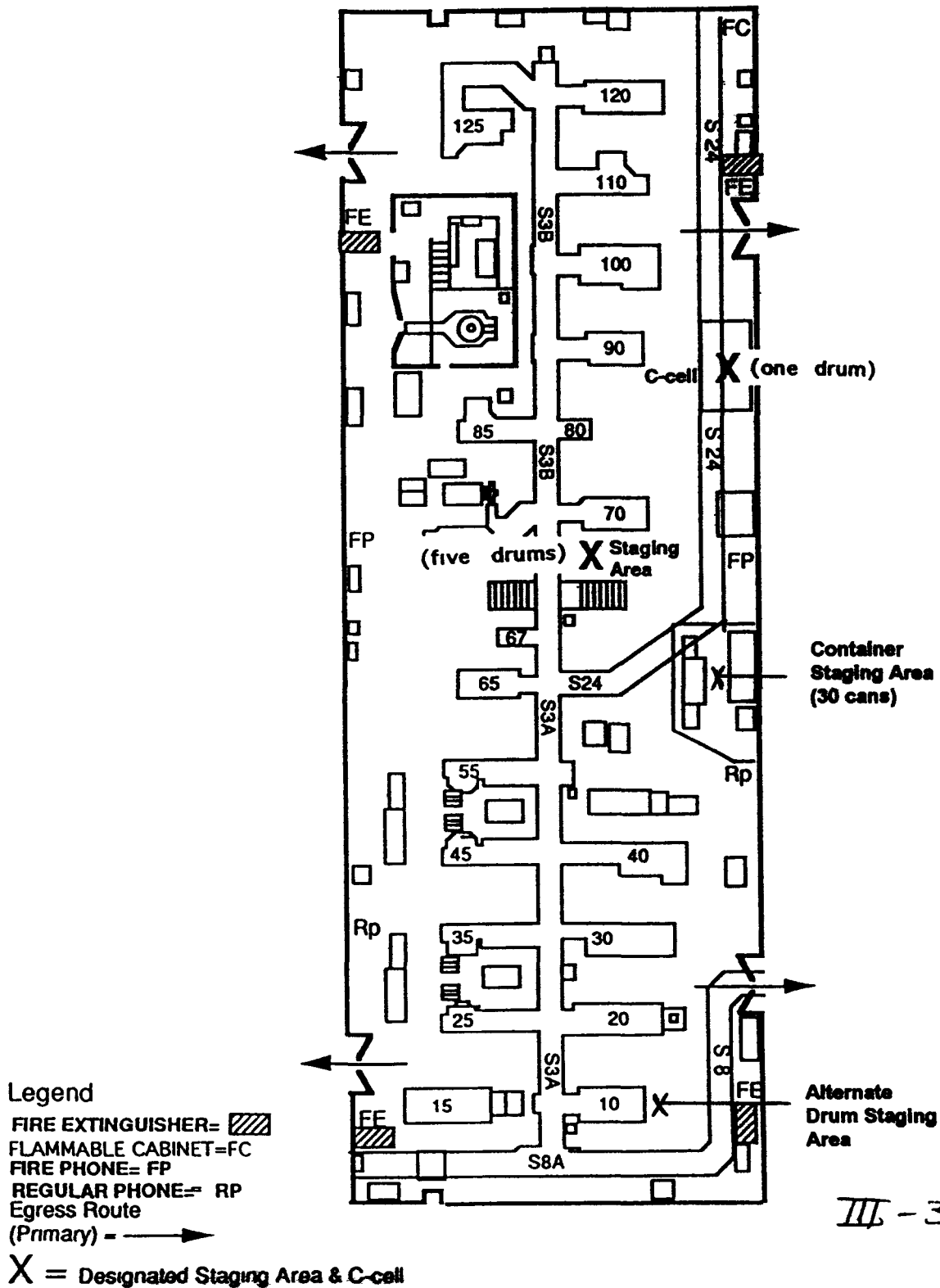
145

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Module A Building 707 Building Maps



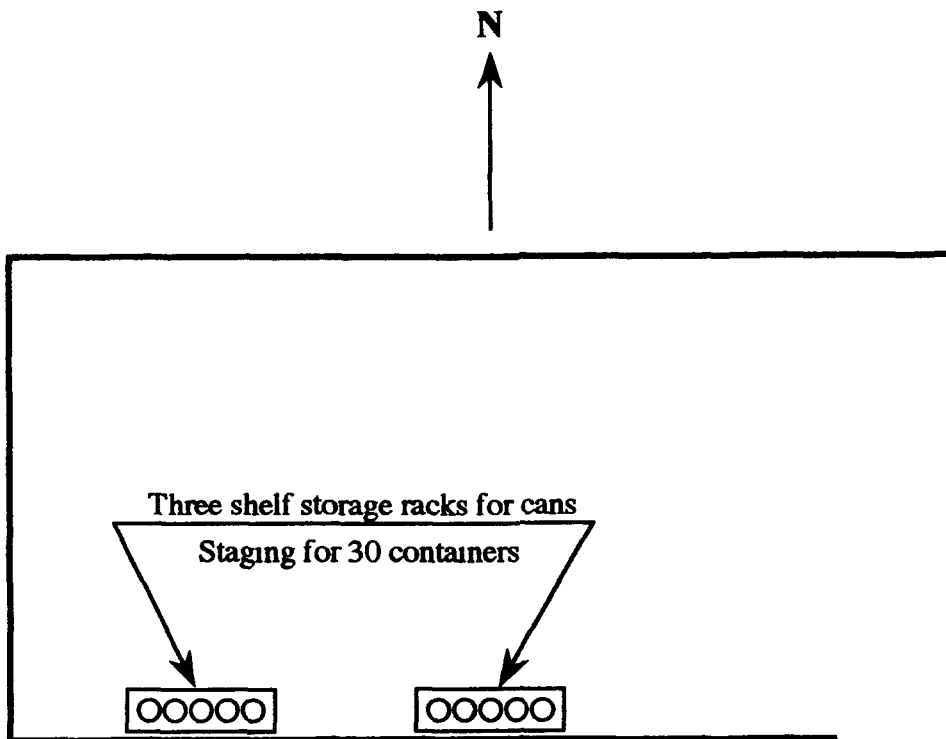
Last Revision Date 01/09/96



III - 34 b

146

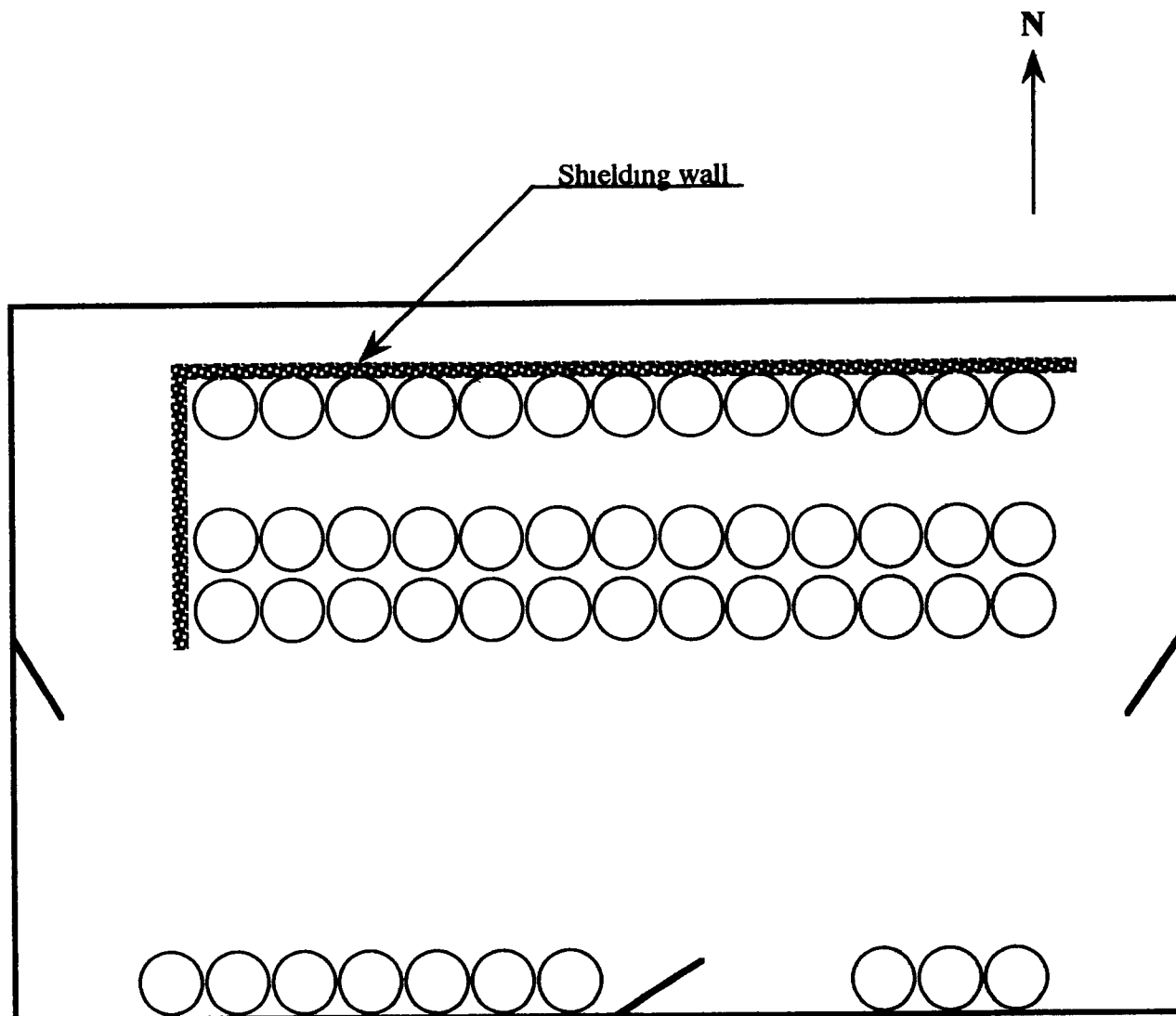
**Building 707, Room 167
Container Storage and
Calorimetry Area**



NOTE.

1) Typical container layout Actual may vary

**Building 707, Room 181
Container Storage Area**



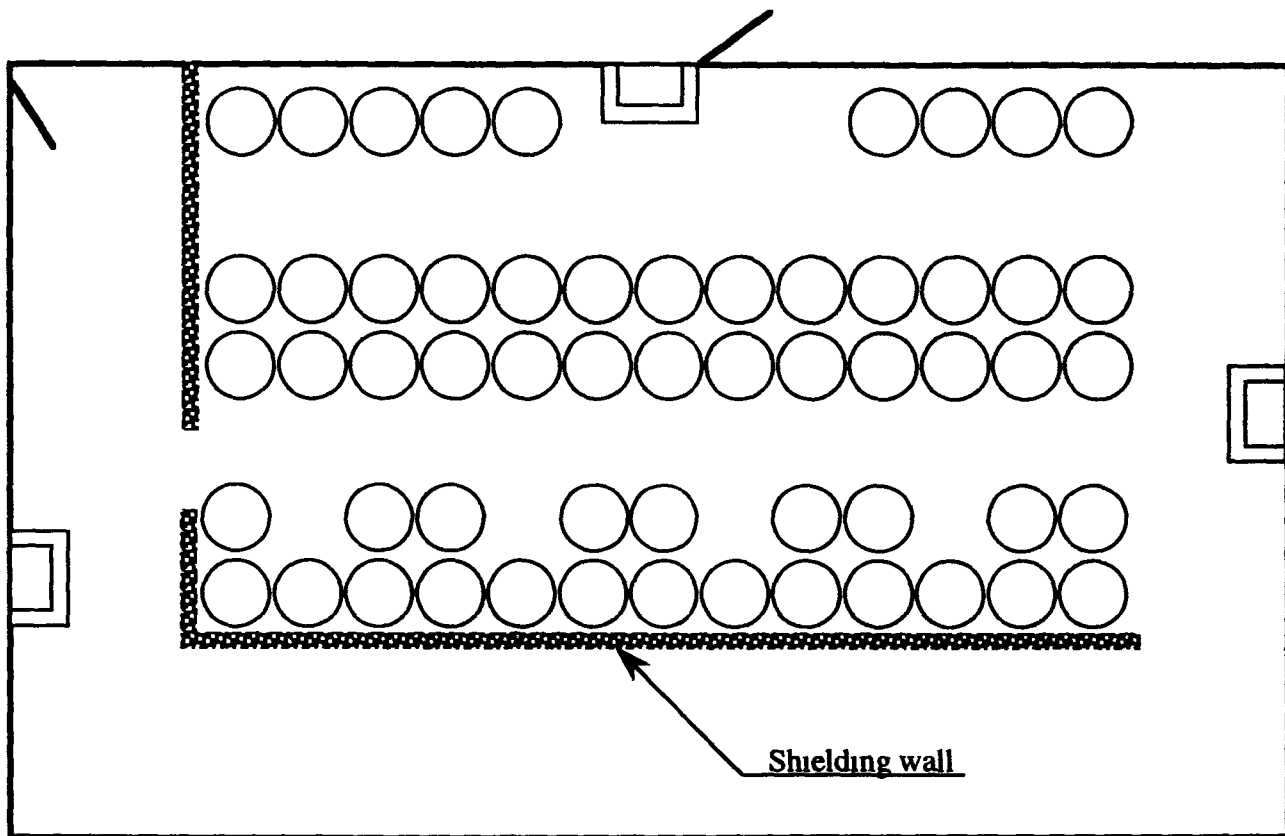
NOTE.

1) Typical container layout. Actual may vary

III 34d

RAH
02/08/97

**Building 707, Room 182
Container Storage Area**

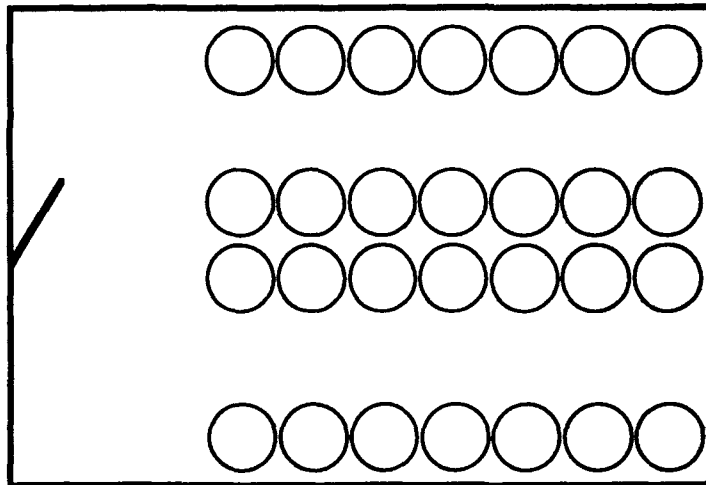


NOTE

1) Typical container layout Actual arrangement may vary

III 34e

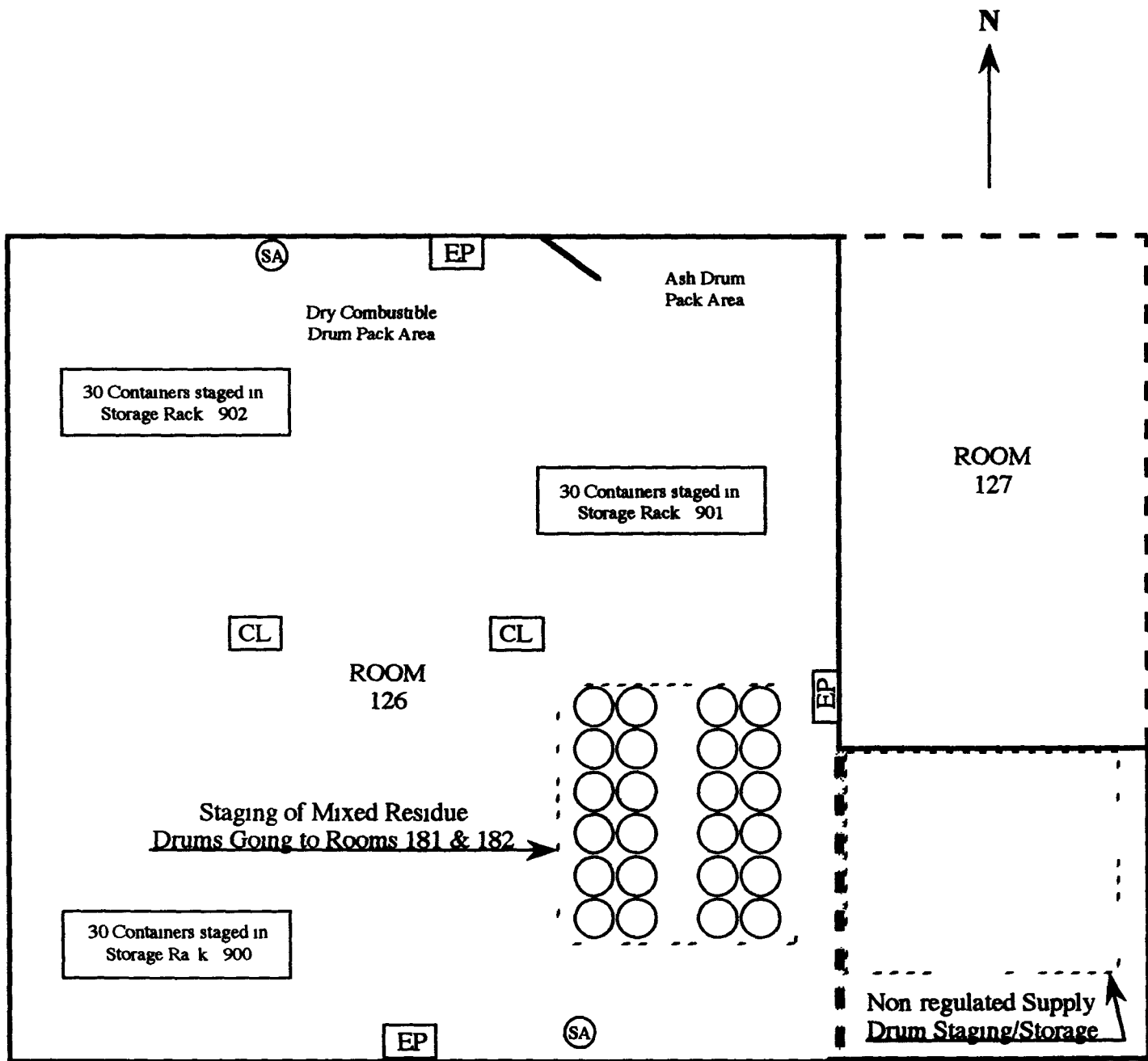
**Building 707, Room 183
Container Storage Area**



NOTE

1) Typical container layout Actual may vary

**Building 707, Module F, Room 126
Container Storage Area**



NOTE.

- 1) Typical container layout. Actual may vary
- 2) SAAM locations are provided for information only and are subject to change

Legend

EP = Electric Panel

CL = Column

SA = SAAM

III 34g

RAH
05/09/97

151

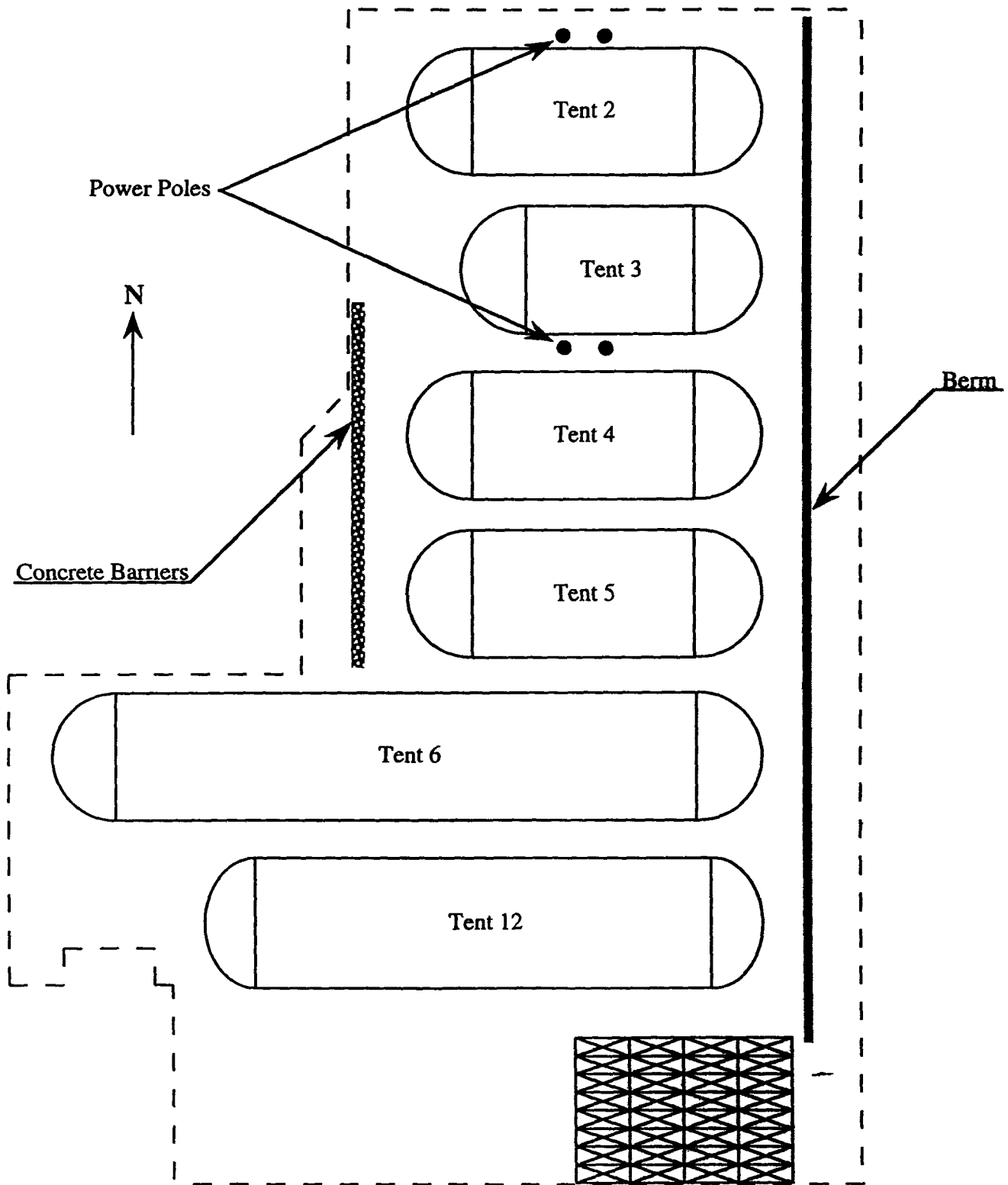
UNIT INFORMATION SHEET

18 Unit 750.1

Unit Description	Unit 750 1 is made up of six tents within a fenced area on the 750 Pad located between Portal 1 and Building 750 on the south side of the Protected Area
Maximum Unit Capacity	10 200 cubic yards (2 244 000 gallons)
Unit Liquid Capacity	9 900 cubic yards (2 178 000 gallons)
Unit EPA Waste Codes	D001 D011 D018 D019 D022 D028 D029 D035 D038 D040 D043 F001 F003 F005 F007 F009 F039 P002 P003 P005 P010 P012 P014 P016 P018 P022 P024 P027 P030 P048 P051 P059 P074 P077 P087 P092 P093 P098 P101 P104-P106 P108 P113 P116 P119 P121 P123 U002 U004 U007 U009 U012 U018 U019 U022 U025 U027 U028 U030 U031 U034 U036 U037 U041 U044 U047 U048 U050 U052 U053 U055 U057 U063 U067 U073 U075 U077 U084 U088 U098 U101 U103 U105 U108 U112 U113 U116 U118 U120 U122 U123 U125 U127 U131 U134 U137 U138 U140 U144 U147 U148 U151 U154 U159 U161 U162 U165 U166 U166 U169 U170 U173 U179 U188 U190 U191 U196 U197 U201 U202 U204 U207 U211 U213 U220 U222 U225 U228 U235 U238 U240 U328 U353 U359
Unit Waste Types	Mixed hazardous
Special Unit Conditions	<ol style="list-style-type: none"> 1) The Permittee shall comply with the 750/904 Pad Tent Panel Repair/Replacement Contingency Plan dated August 8 1996 (see page III 18a) 2) <u>Runoff water resulting from precipitation will be discharged from the pad, and will be managed as non hazardous waste</u> 3) <u>Wooden crates that could be exposed to precipitation will be covered with plastic sheeting</u>

152

**RCRA Unit 750 1
750 Pad
Outside Storage Arrangement**



Legend

- - - = Fence
- ▣ = Crate

153

III 35a



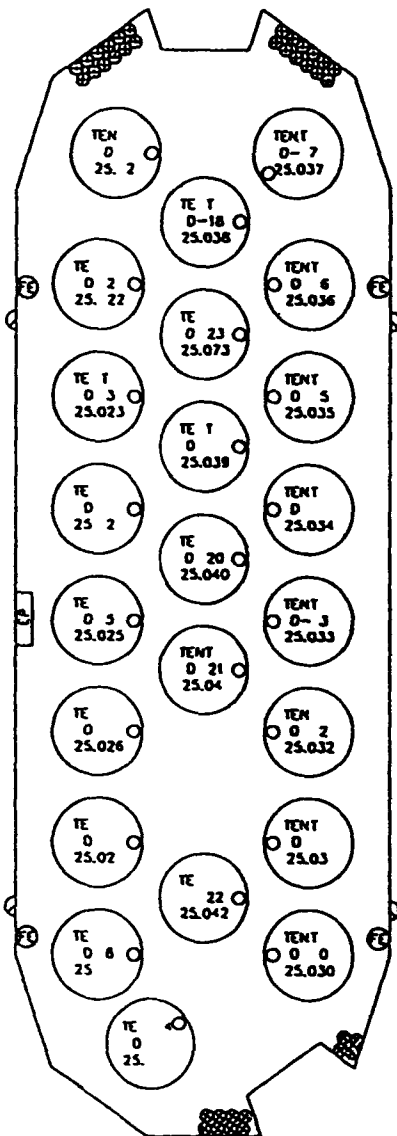
PLANT STANDARD TANK LABEL

RCRA NUMBER

AM	QUANT	DESCRIPTION	MATERIAL
----	-------	-------------	----------

NOTES

- 1) TYPICAL CONTAINER LAYOUT ACTUAL ARRANGEMENT MAY VARY
- 2) DRUMS BE STACKED THREE HIGH



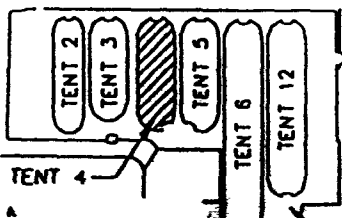
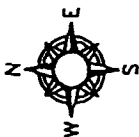
TENT 4

30 15 0 30 60



SCALE 1"=30'

III-35c



REVISION	REVISION	DATE
KEYWORDS	ORIGINAL ISSUE	11/17/94
1. RCRA	JOB NO. 34630002	0
2. TANK	TOLERANCES	DATE 11/17/94
3. STORAGE	INCHES	11/17/94
4. WASTE	INCHES	11/17/94
5. LAYOUT	INCHES	11/17/94
6. RISK ASSESSMENT	INCHES	11/17/94
7. 750 PAD	INCHES	11/17/94
8. TENT	INCHES	11/17/94
9. TENT	INCHES	11/17/94
10. TENT	INCHES	11/17/94
11. TENT	INCHES	11/17/94
12. TENT	INCHES	11/17/94
13. TENT	INCHES	11/17/94
14. TENT	INCHES	11/17/94
15. TENT	INCHES	11/17/94
16. TENT	INCHES	11/17/94
17. TENT	INCHES	11/17/94
18. TENT	INCHES	11/17/94
19. TENT	INCHES	11/17/94
20. TENT	INCHES	11/17/94
21. TENT	INCHES	11/17/94
22. TENT	INCHES	11/17/94
23. TENT	INCHES	11/17/94
24. TENT	INCHES	11/17/94
25. TENT	INCHES	11/17/94

U.S. DEPARTMENT OF ENERGY

Rocky Fls. Environmental Technology Site
Glenwood, Colorado

RCRA PERMIT MODIFICATION
750 PAD TENT 4
LAYOUT

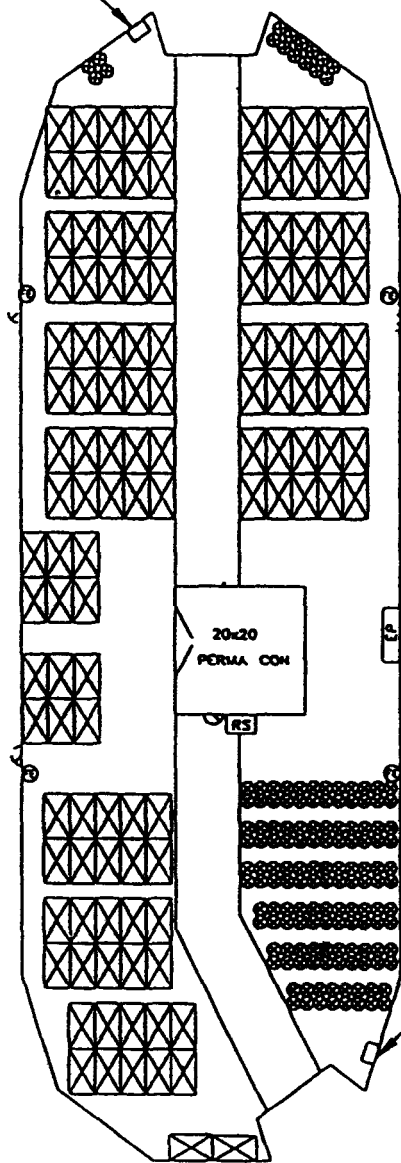
155

PAR	QUANT	DESCRIPTION	TOTAL
-----	-------	-------------	-------

NOTES

- 1) TYPICAL CONTAINER LAYOUT ACTUAL ARRANGEMENT AR
- 2) ALL CRATES MUST BE STACKED FIVE HIGH DRUMS BE STACKED THREE HIGH AND FULL CRATES BE STACKED FOUR HIGH

FLAMABLE
STORAGE CABINET



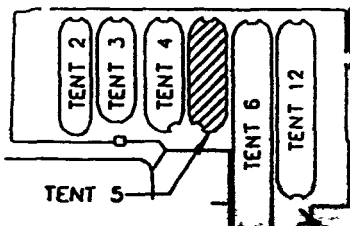
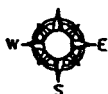
TENT 5

30 15 0 30 60

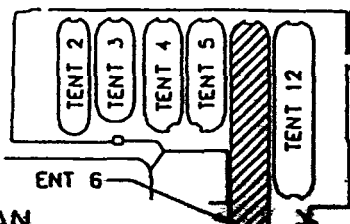
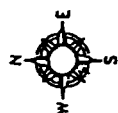
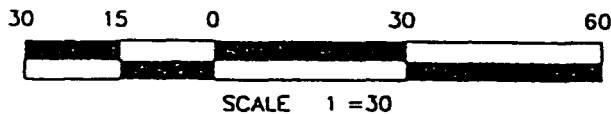
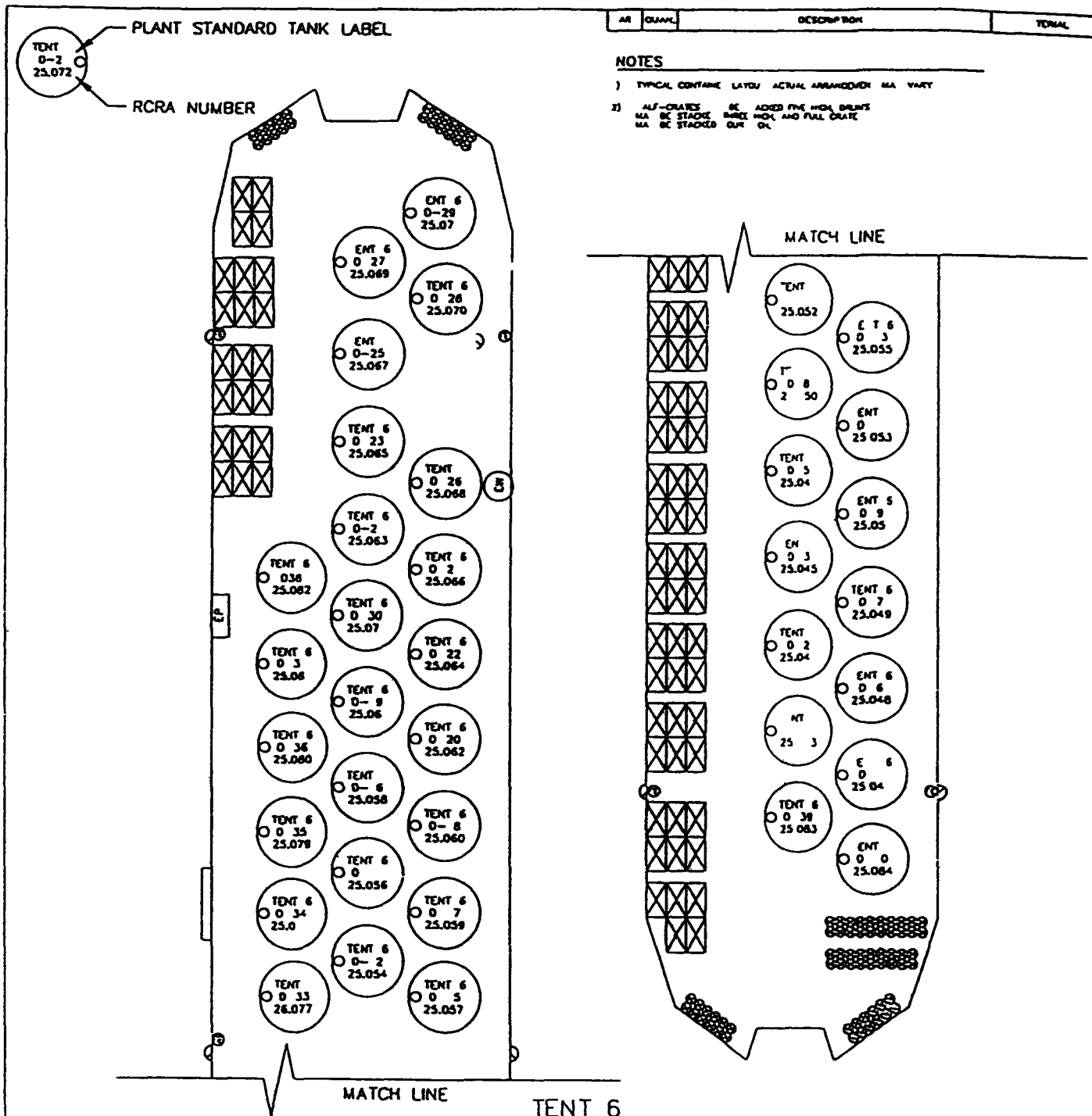


SCALE 1 = 30

III-35d



REVISION	8	REVISED		DATE	11/28/93
KEYWORDS	ORIGINAL ISSUE				
1. RCRA	JOB NO.	30630802	BY	DATE	11/27/93
2. TANK	TOLERANCES	FRAC	1/2	DESIGNED	11/27/93
3. STORAGE	ANGLE	XX	XX	DRAWN	11/27/93
4. WASTE	DOC	XX	XX	CHECKED	11/27/93
5. LAYOUT	UNLESS NOTED OTHERWISE	APPROVED			
NAME / TITLE	750_PAD	REMOVE BURNS AND SHARP CORNERS			
TENT 5					
U.S. DEPARTMENT OF ENERGY					
Rocky Fl. Environmental Technology Site					
RCRA PERMIT MODIFICATION					
750 PAD, TENT 5 LAYOUT					



III-35e

KEYWORDS	REVISED	ORIG. ISSUE	DATE	JOB NO.
1. RORA			08/20/75	39450003
2. TANK			7/74	
3. STORAGE				
4. WASTE				
5. LAYOUT				
6. PAD				
7. TENT 6				
8. LAYOUT				

U.S. DEPARTMENT OF ENERGY

Rocky Flats

Environmental Technology Site

750 PAD, TENT 6

LAYOUT

UNIT INFORMATION SHEET

19 Unit 771.1

Unit Description	Building 771 is located on the northern end of the facility with storage areas consisting of rooms gloveboxes and vaults
Maximum Unit Capacity	32 102 gallons
Unit Liquid Capacity	6,214 gallons (23,520 liters)
Unit EPA Waste Codes	See specific waste codes below for each type of container storage area
Unit Waste Types	Mixed hazardous
Special Unit Conditions	None
Container Storage Areas Within This Unit	

a Room type areas

The following EPA waste codes apply globally to the Room type areas within this container storage unit. The individual rooms that are used for container storage in this unit follow the listing of the approved EPA waste codes. Typical container arrangement diagrams are provided after the listing of the individual areas

EPA Waste Codes	D001 D012 D015 D019 D021 D029 D033 D035 D043 F001 F003 F005 F007 F009 P011 P012 P014 P015 P022 P028 P029 P045 P062 P076 P087 P098 P101 P104 P106 P113 P119 P120 P121 U002 U004 U019 U031 U037 U041 U042 U044 U055 U057 U067 U071 U074 U075 U077 U079 U080 U084 U098 U102 U107 U108 U112 U120 U121 U123 U127 U131 U133 U134 U138 U144 U148 U151 U154 U158 U159 U161 U162 U165 U167 U169 U170 U188 U190 U191 U196 U201 U207 U209 U211 U213 U220 U225 U227 U228 U236 U246 U328 U353 U359
-----------------	---

Room 172

Maximum capacity	5 225 gallons
Liquid capacity	N/A
Waste types	TRM Mixed residues
Area limitations	None

Room 181A

159

Maximum capacity 5 720 gallons
Liquid capacity 5 720 gallons

Waste types TRM Mixed residues

Area limitations

- 1) Caustic wastes will not be stored adjacent to the tanks nor under any acid containing piping

Room 182

Maximum capacity 880 gallons
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations None

Room 183

Maximum capacity 5 830 gallons
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations None

Room 186

Maximum capacity 2 420 gallons
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations None

Annex

Maximum capacity 11 330 gallons
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations None

b Glovebox type areas

The following EPA waste codes apply globally to the glovebox type areas within this container storage unit. The individual gloveboxes that are used for container storage in this unit follow the listing of the approved EPA waste codes. Typical container arrangement diagrams are provided after the listing of the individual areas.

EPA Waste Codes D002 D004 D008 D011

Room 163 Glovebox 108 109 and 110

Maximum capacity	GBox 108 11 gallons (42 liters) GBox 109 18 gallons (68 liters) GBox 110 23 gallons (88 liters) GBox 112 21 gallons (80 liters) GBox 113 37 gallons (140 liters) GBox 114 16 gallons (60 liters) GBox 115 14 gallons (52 liters)
Liquid capacity	Same as maximum capacity
Waste types	LLM TRM Mixed residues
Area limitations	None

Room 164 Glovebox 62 68 72 74 98 101 and 103

Maximum capacity	GBox 62 72 and 74 17 gallons each (64 liters each) GBox 68 98 101 and 103 16 gallons each (60 liters each)
Liquid capacity	Same as maximum capacity
Waste types	LLM TRM Mixed residues
Area limitations	None

Room 180A Glovebox A31 A51 A52 and A53

Maximum capacity	GBox A31 7 gallons (27 liters) GBox A51 A52 and A53 42 gallons each (159 liters each)
Liquid capacity	Same as maximum capacity
Waste types	LLM TRM Mixed residues
Area limitations	

- 1) The containers stored in GBox A31 will not be physically removed from their storage bins during routine inspections of the containers in this glovebox. The containers will be inspected in conjunction with the bi-monthly nuclear material accountability inspection or at some other frequency in accordance with the Nuclear Materials Safeguards Procedure Manual.

Room 180E Glovebox E11

Maximum capacity	23 gallons (88 liters)
------------------	------------------------

Liquid capacity	Same as maximum capacity
Waste types	LLM TRM Mixed residues
Area limitations	None

Room 180F Glovebox F60

Maximum capacity	39 gallons (148 liters)
Liquid capacity	39 gallons (148 liters)
Waste types	LLM TRM Mixed residues
Area limitations	None

Room 180K Glovebox K10 and K20

Maximum capacity	GBox K10 15 gallons (56 liters) GBox K20 38 gallons (144 liters)
Liquid capacity	Same as maximum capacity
Waste types	LLM TRM Mixed residues
Area limitations	

- 1) Solutions from tanks may be drained into bottles within GBox K20. During draining operations precautions will be taken to prevent any spilled liquid from contacting other bottles in GBox K20.

Room 187 Glovebox 187A and 187C

Maximum capacity	GBox 187A 38 gallons (144 liters) GBox 187C 18 gallons (68 liters)
Liquid capacity	Same as maximum capacity
Waste types	LLM TRM Mixed residues
Area limitations	None

c Vault type areas

The following EPA waste codes apply globally to vault type areas within this container storage unit. Individual vault type areas that are used for container storage in this unit follow the listing of the approved EPA waste codes. Typical container arrangement diagrams are provided after the listing of the individual areas.

EPA Waste Codes	D001 D003 D011 D018 D019 D035 D040 F001 F003 F005
-----------------	---

162

Room 146C

Maximum capacity 75 gallons (284 liters)
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations

- 1) This area is subject to inspection by remote radiation monitoring. In addition, a bi-monthly inspection of a randomly selected portion of the containers and an annual 100% inspection which is coordinated with routine nuclear material accountability inventories will be conducted.

Room 184

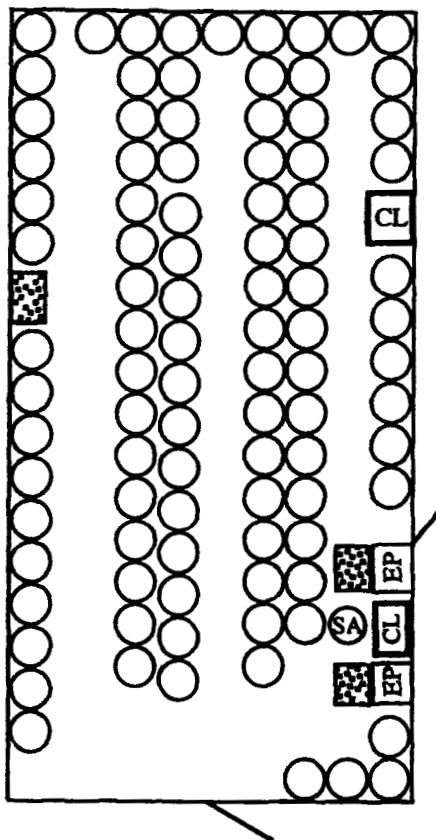
Maximum capacity 128 gallons (485 liters)
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations

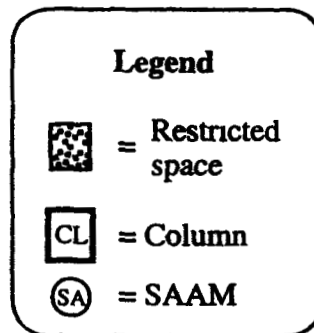
- 1) This area is subject to inspection by remote radiation monitoring. In addition, a bi-monthly inspection of a randomly selected portion of the containers and an annual 100% inspection which is coordinated with routine nuclear material accountability inventories will be conducted.

RCRA Unit 771 1
Room 172
Container Storage Area
(Room)

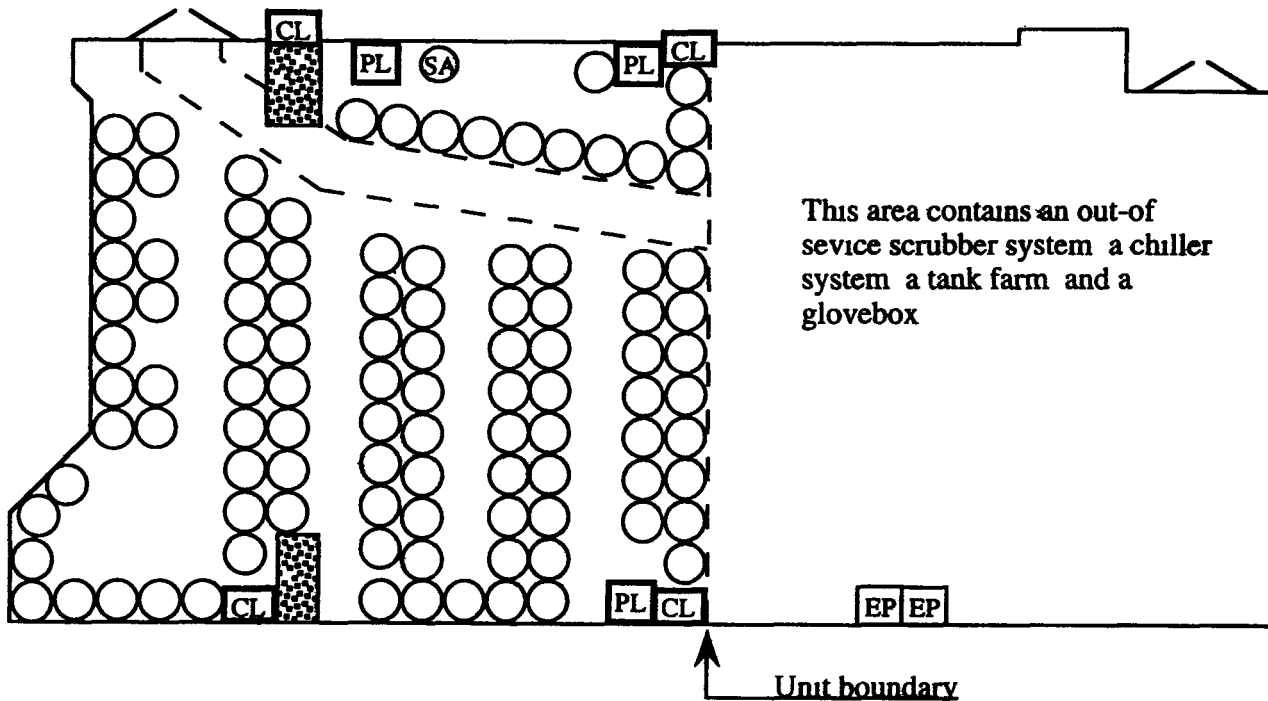


NOTES

- 1) Typical container layout, actual may vary
- 2) SAAM locations are provided for information only and are subject to change



**RCRA Unit 771 1
Room 181A
Container Storage Area
(Room)**



Secondary containment capability

Typical inventory = 104 55 gal containers






Glovebox area = 1717 sf

Minimum berm height = 0 6 in

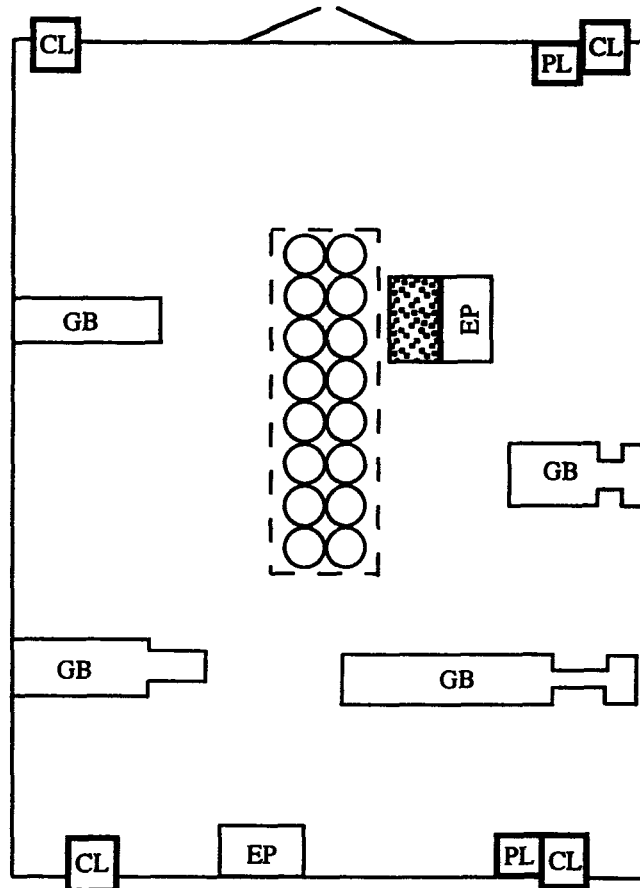
NOTES

- 1) Typical container layout actual may vary
- 2) SAAM locations are provided for information only and are subject to change
- 3) Secondary containment is provided 10% of the container volume and 100% of the volume of the 32 gallon pencil tank located in the room Secondary containment is provided by the entire floor in Room 181A

Legend

-  = Electric Panel
-  = plenum
-  = Column
-  = SAAM
-  = Restricted space

RCRA Unit 771 1
Room 182
Container Storage Area
(Room)



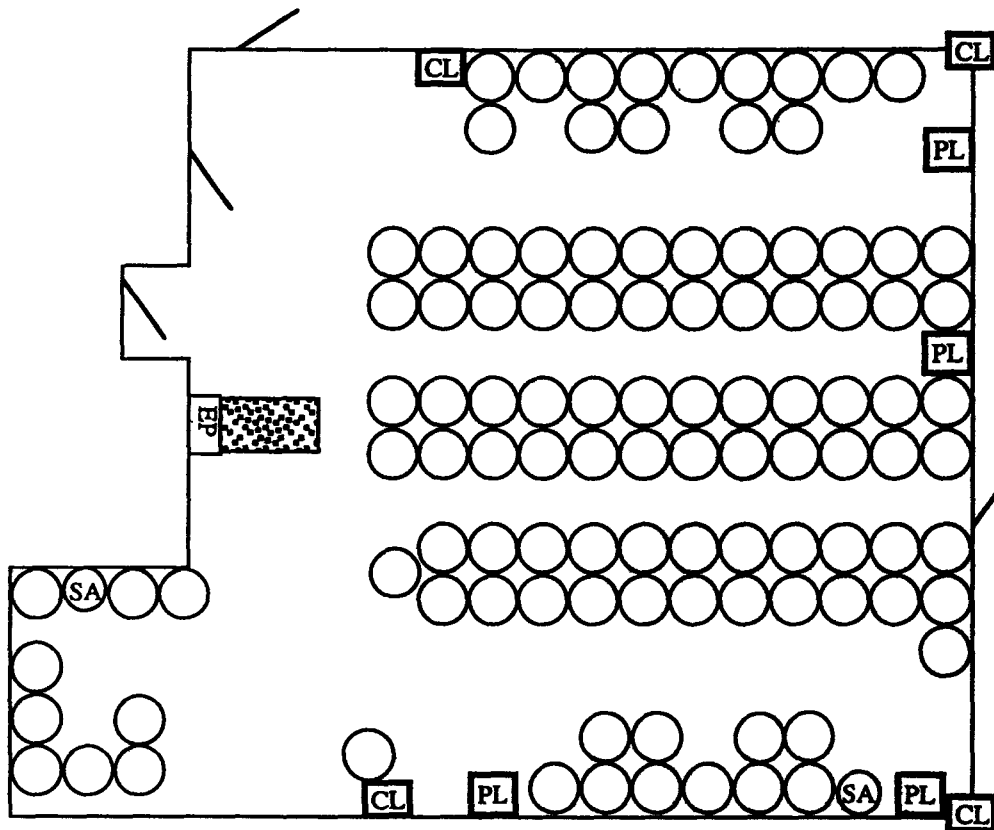
NOTES

- 1) Typical container arrangement actual may vary
- 2) SAAM locations are provided for information only and are subject to change

Legend

<div style="border: 1px solid black; padding: 2px; display: inline-block;">EP</div>	= Electric Panel
<div style="border: 1px solid black; padding: 2px; display: inline-block;">PL</div>	= plenum
<div style="border: 1px solid black; padding: 2px; display: inline-block;">CL</div>	= Column
---	= Unit Boundary
<div style="width: 20px; height: 10px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); border: 1px solid black; display: inline-block;"></div>	= Restricted space






**RCRA Umt 771 1
Room 183
Container Storage Area
(Room)**



NOTES

- 1) Typical container arrangement actual may vary
- 2) SAAM locations are provided for information only and are subject to change

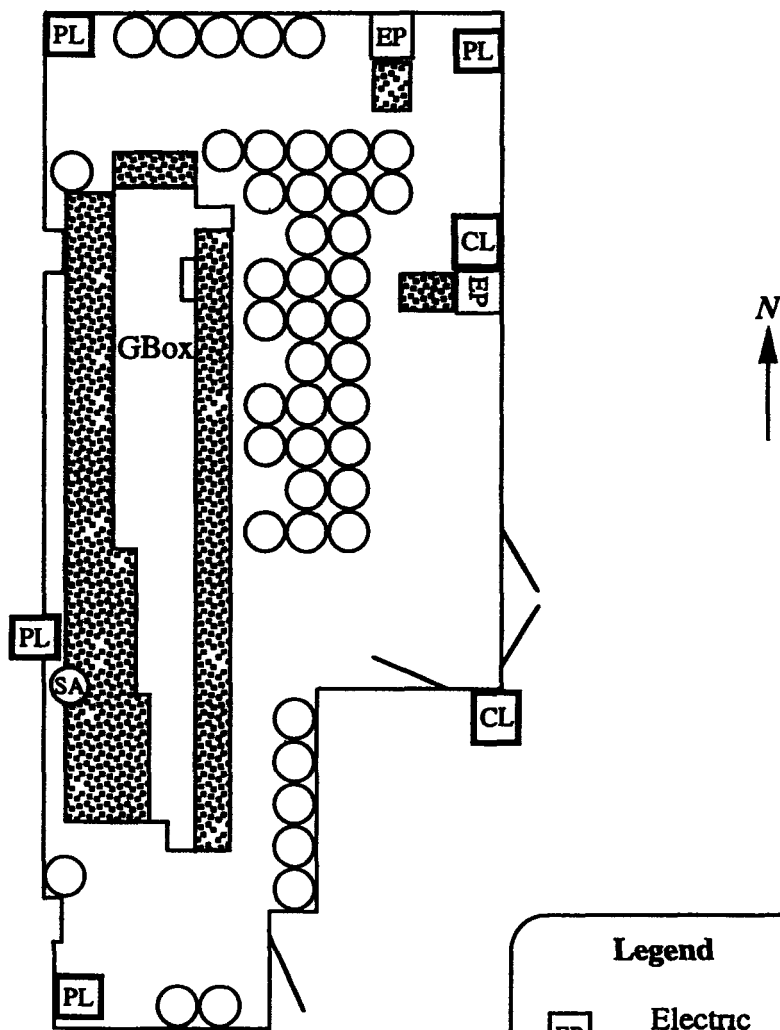
Legend

-  = Electric Panel
-  = plenum
-  = Column
-  = SAAM
-  = Restricted space

III 402

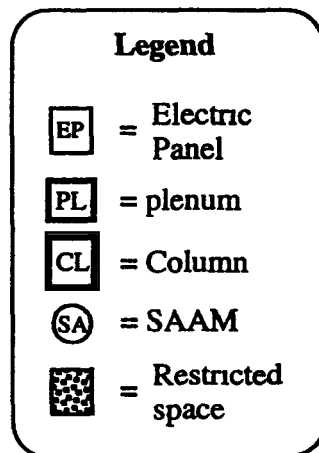
1167

RCRA Unit 771 1
Room 186
Container Storage Area
(Room)

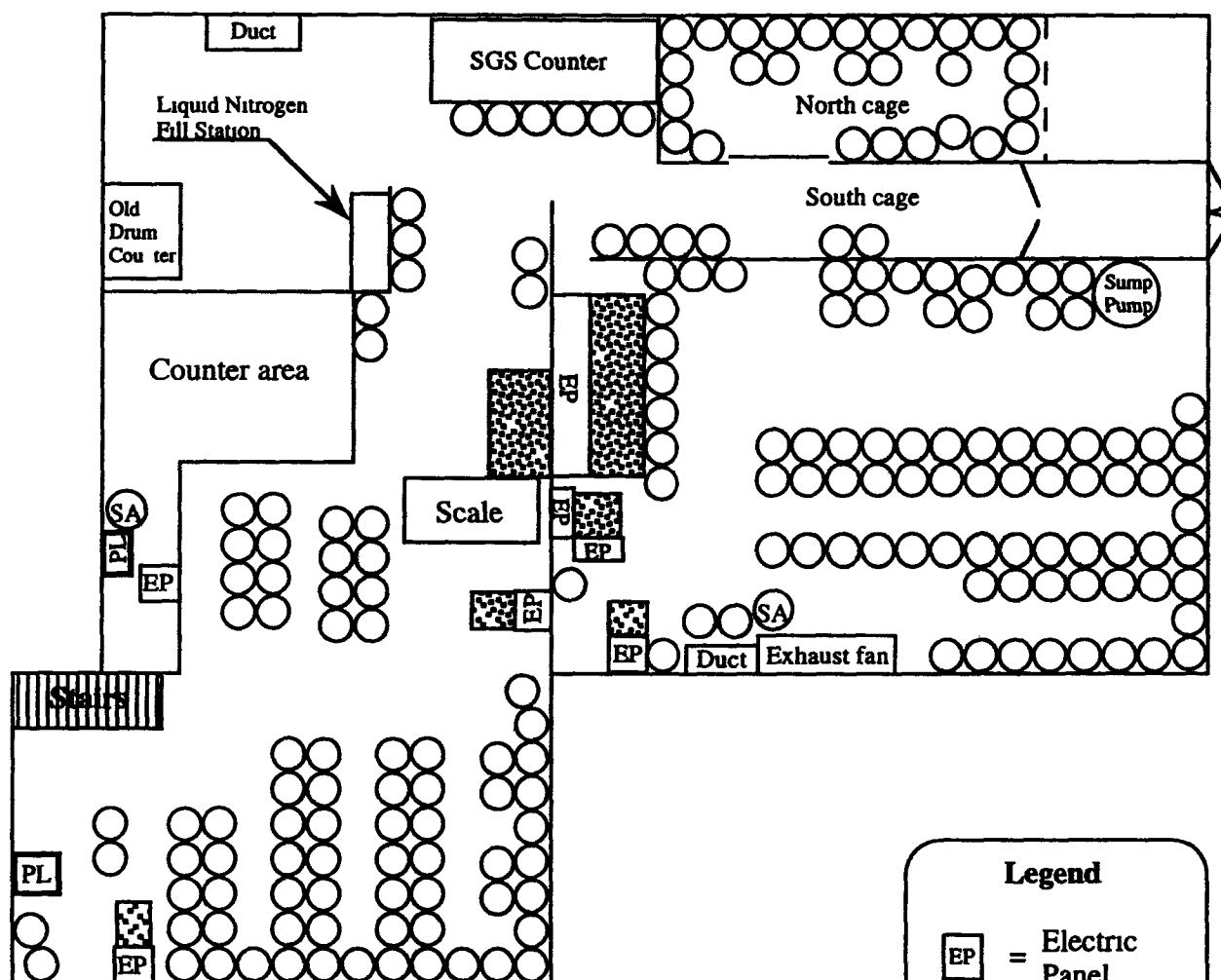


NOTES

- 1) Typical container arrangement, actual may vary
- 2) SAAM locations are provided for information only and are subject to change



**RCRA Unit 771 1
Annex
Container Storage Area
(Room)**



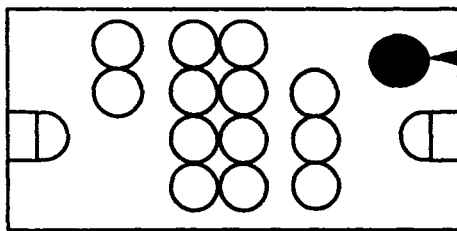
Legend

- EP = Electric Panel
- PL = plenum
- CL = Column
- SA = SAAM
- = Restricted space

NOTES

- 1) Typical container layout actual may vary
- 2) SAAM locations are provided for information only and are subject to change

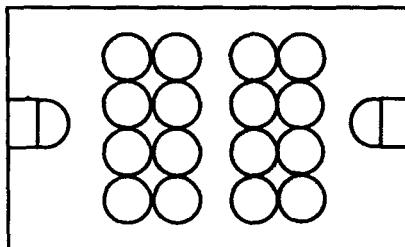
**RCRA Unit 771 1
Room 163
Container Storage Area
(Gloveboxes)**



GB 108

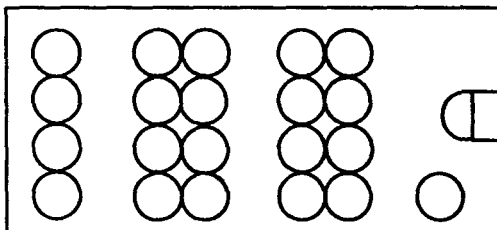
Fixed pedestal

Secondary containment capability.
Total container inventory = 42 liters
Secondary containment area = 7 sf
Minimum berm height = 0 9 in



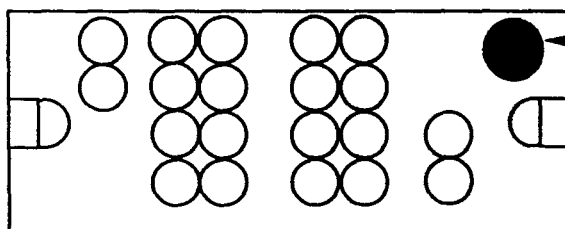
GB 109

Secondary containment capability
Total container inventory = 68 liters
Secondary containment area = 8 sf
Minimum berm height = 0 9 in



GB 110

Secondary containment capability
Total container inventory = 88 liters
Secondary containment area = 10 sf
Minimum berm height = 1 0 in



GB 112

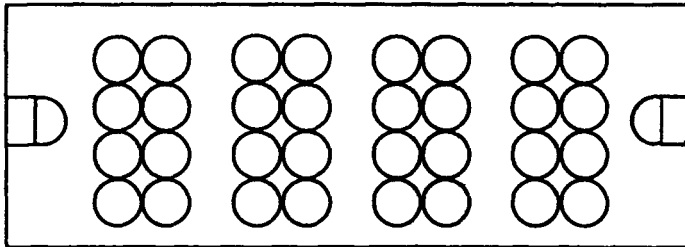
Fixed
Pedestal

Secondary containment capability.
Total container inventory = 88 liters
Secondary containment area = 10 sf
Minimum berm height = 0 9 in

TIL - 40g

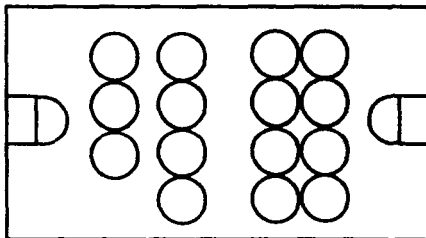
Continued on next page

RCRA Unit 771 1
Room 163
Container Storage Area
(Gloveboxes)



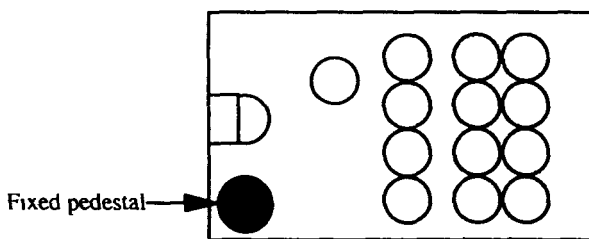
GB 113

Secondary containment capability.
 Total container inventory = 140 liters
 Secondary containment area = 15 sf
 Minimum berm height = 0.9 in



GB 114

Secondary containment capability.
 Total container inventory = 60 liters
 Secondary containment area = 8 sf
 Minimum berm height = 0.9 in



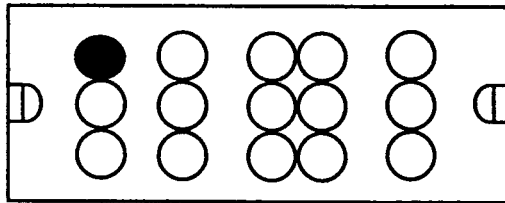
GB 115

Secondary containment capability.
 Total container inventory = 42 liters
 Secondary containment area = 3 sf
 Minimum berm height = 0.9 in

NOTES

- 1) Typical container layout actual may vary
- 2) Fixed pedestals in gloveboxes are approximately 1 1/2" high and 9" in diameter
- 3) Gloveboxes 108, 109, and 110 and Gloveboxes 112, 113, 114, and 115 are connected to each other but are separated by a 2" lip between these gloveboxes and the non regulated gloveboxes to which they are connected

**RCRA Unit 771 1
Room 164
Container Storage Area
(Gloveboxes)**



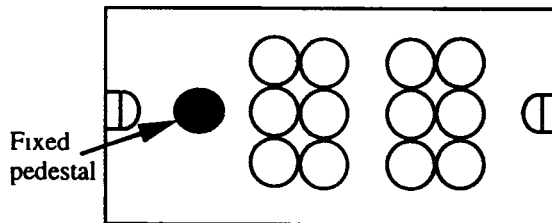
GBox 62

Secondary containment capability.

Typical inventory = 64 liters

Secondary containment area = 9 sf

Minimum berm height = 0 7 in



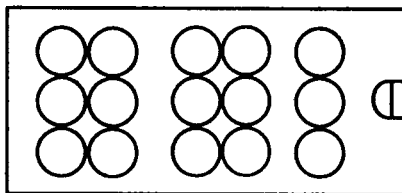
GBox 68 and 101

Secondary containment capability.

Typical inventory = 60 liters each

Secondary containment area = 9 sf each

Minimum berm height = 0 6 in each



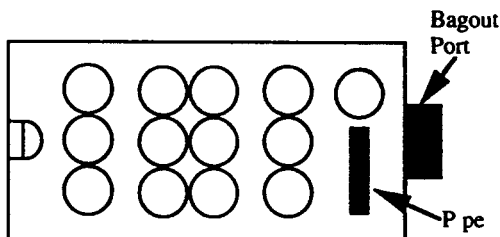
GBox 72

Secondary containment capability

Typical inventory = 64 liters each

Secondary containment area = 9 sf each

Minimum berm height = 0 7 in each



GBox 74

Secondary containment capability.

Typical inventory = 64 liters each

Secondary containment area = 9 sf each

Minimum berm height = 0 7 in each

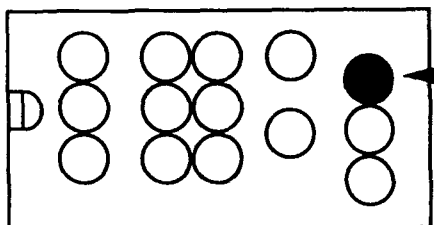
NOTES

- 1) Typical container arrangement, actual may vary
- 2) Gloveboxes are bounded on either side and all have a 2" lip between them
- 3) Fixed pedestals are approximately 1 1/2' high and 9" in diameter

172

III-406

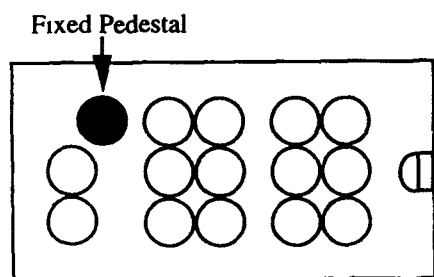
**RCRA Unit 771 1
Room 164
Container Storage Area
(Gloveboxes)**



Fixed
Pedestal

Secondary containment capability = 60
liters each
Secondary containment area = 9 sf each
Minimum berm height = 0.7 in

GBox 98



Fixed Pedestal

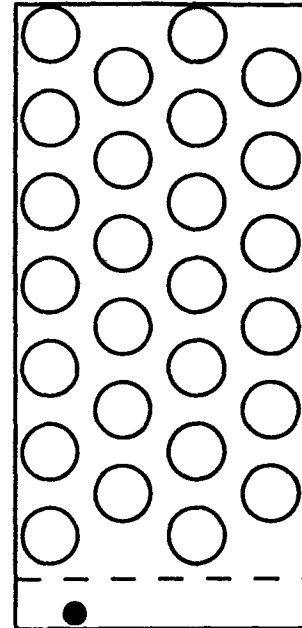
Secondary containment capability = 60
liters each
Secondary containment area = 9 sf each
Minimum berm height = 0.7 in

GBox 103

**RCRA Unit 771 1
Room 180A
Container Storage Area
(Gloveboxes)**



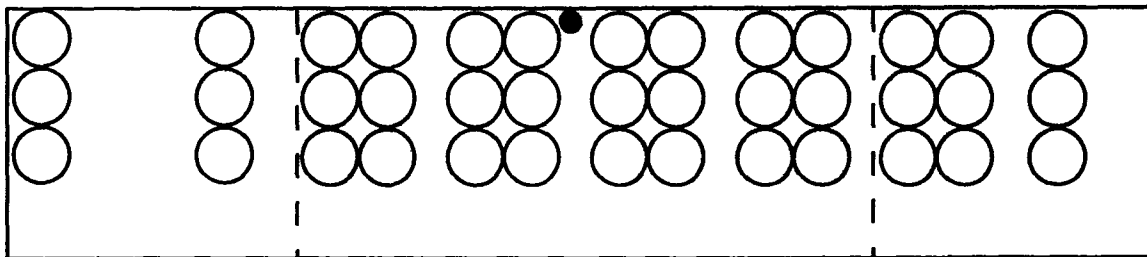
Secondary containment capability.
Typical inventory = 26 liters
Secondary containment area = 18 sf
Minimum berm height = 0 1 in



GBox A31

NOTES

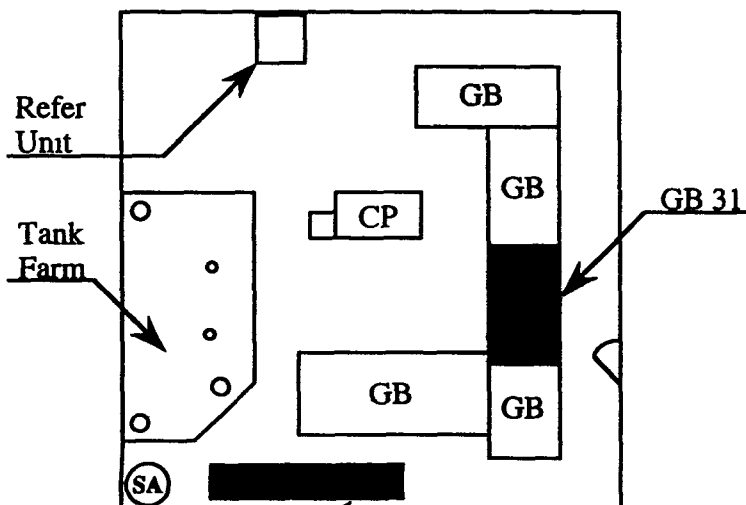
- 1) Typical container layout actual may vary
- 2) GBox A31 has twenty six (26) fixed storage positions
- 3) In the unlikely event the criticality drain were to overflow the excess liquid would drain to the floor of the room



GBox A51

GBox A52

GBox A53



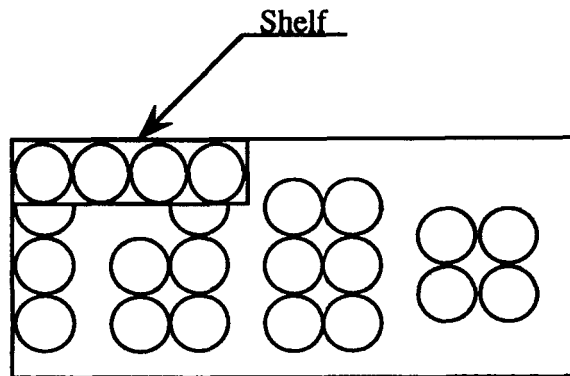
Secondary containment capability.
Typical inventory = 156 liters
Secondary containment area = 8 sf
Minimum berm height = 0 4 in

Legend

- = Criticality drain
- - = Glovebox boundary
- ⊙ = SAAM

174

**Building 771, Room 180E
Container Storage Area
(Glovebox)**



GB E 11

Secondary Containment Capability.

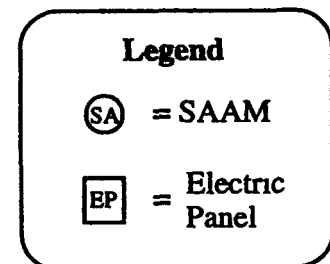
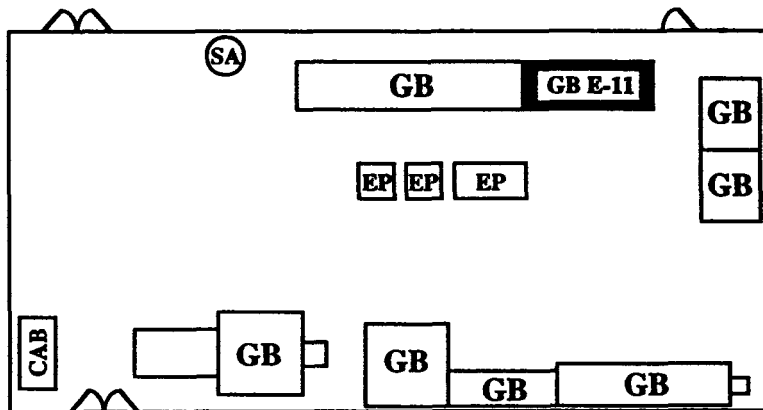
Typical inventory = 88 liters

Secondary containment area = 14 sf

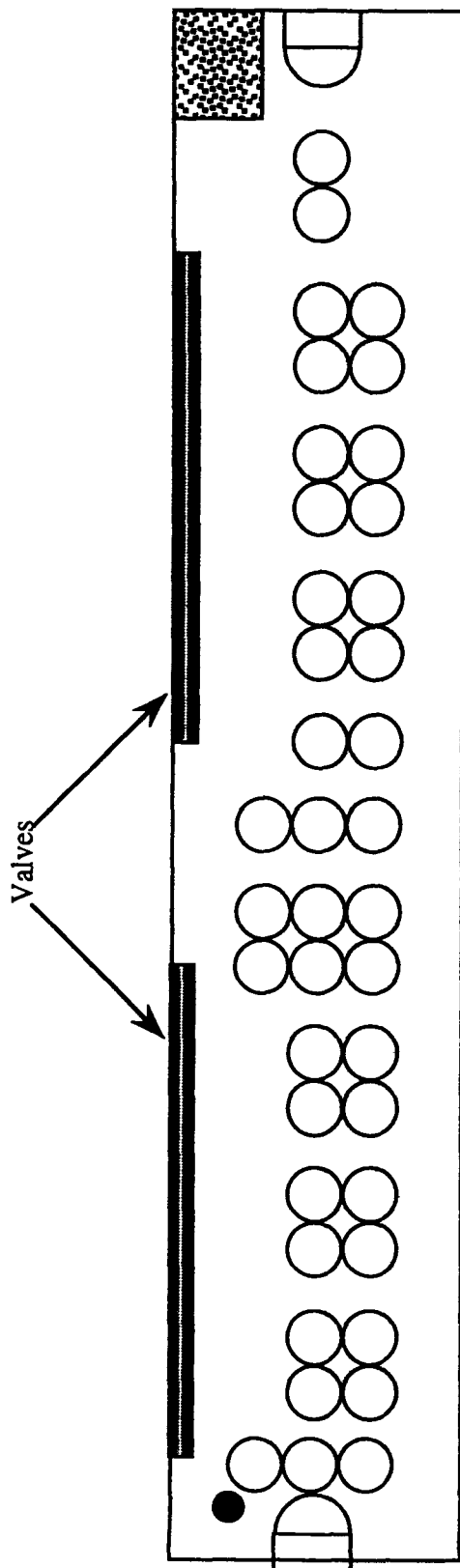
Minimum berm height = 0.5 m

NOTES

- 1) Actual container arrangement may vary
- 2) In the unlikely event the criticality drain were to overflow excess liquid would be directed to the floor of the room



RCRA Unit 771 1, Room 180F
Container Storage Area
(Glovebox)

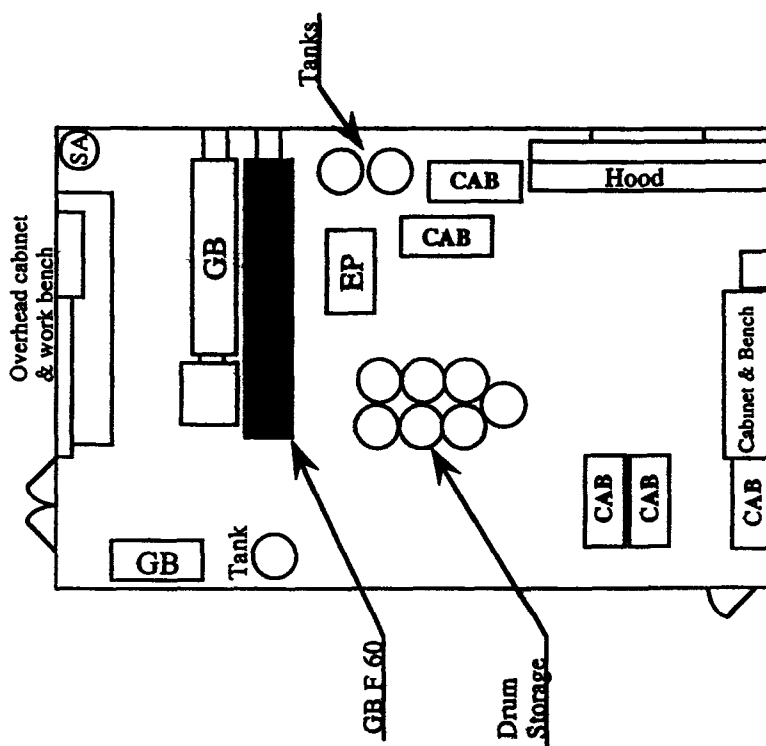
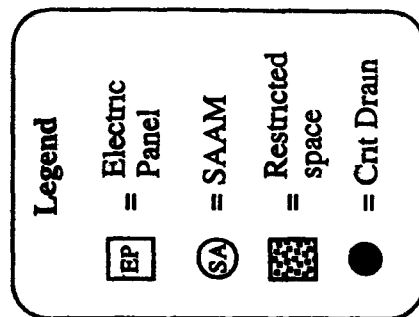


GB F 60

Secondary containment capability.
Typical inventory = 160 liters
Secondary containment area = 24 sf
Minimum berm height = 0.6 in

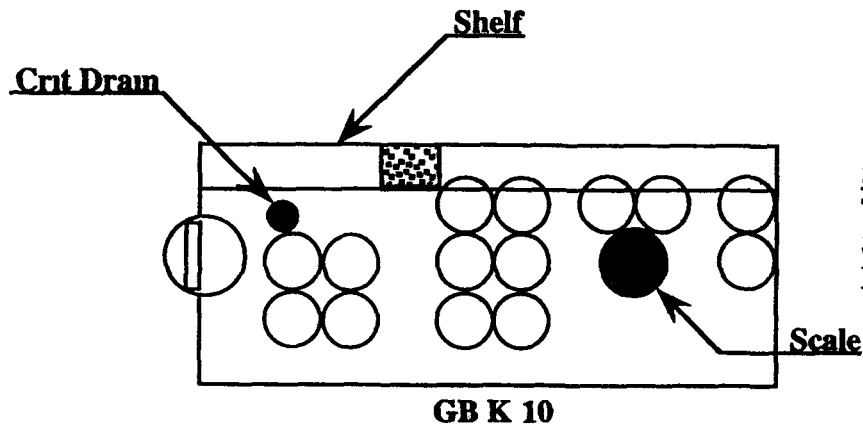
NOTES

- 1) Typical container arrangement actual may vary
- 2) In the unlikely event that the criticality drain were to overflow excess liquid would be directed to the floor of the room

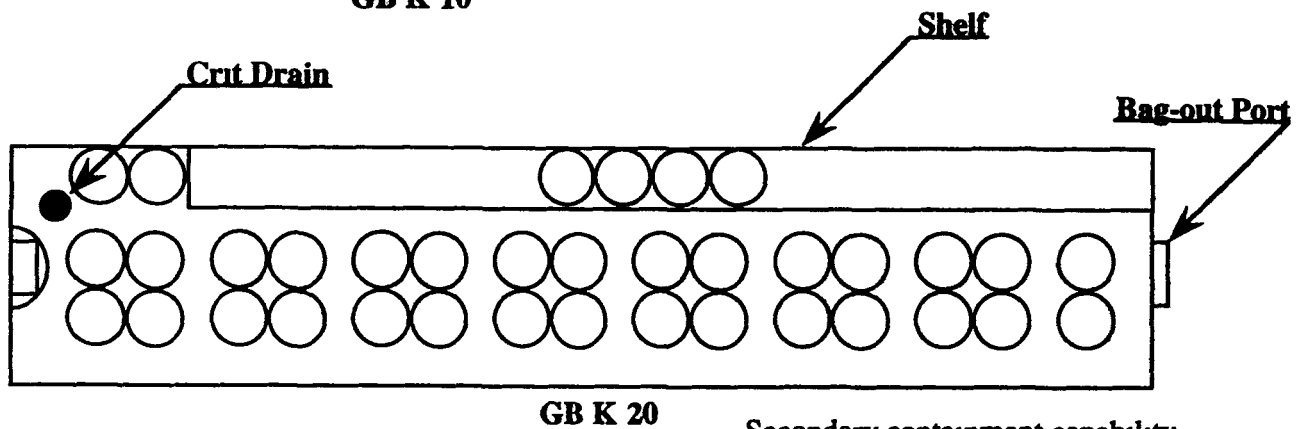


III 40m

**Building 771, Room 180K
Container Storage Area
(Glovebox)**



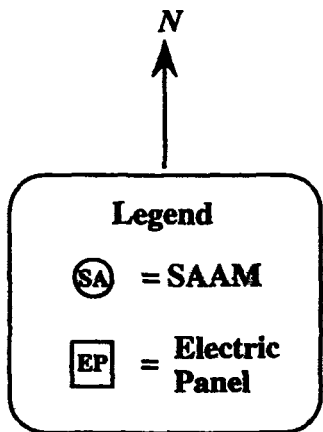
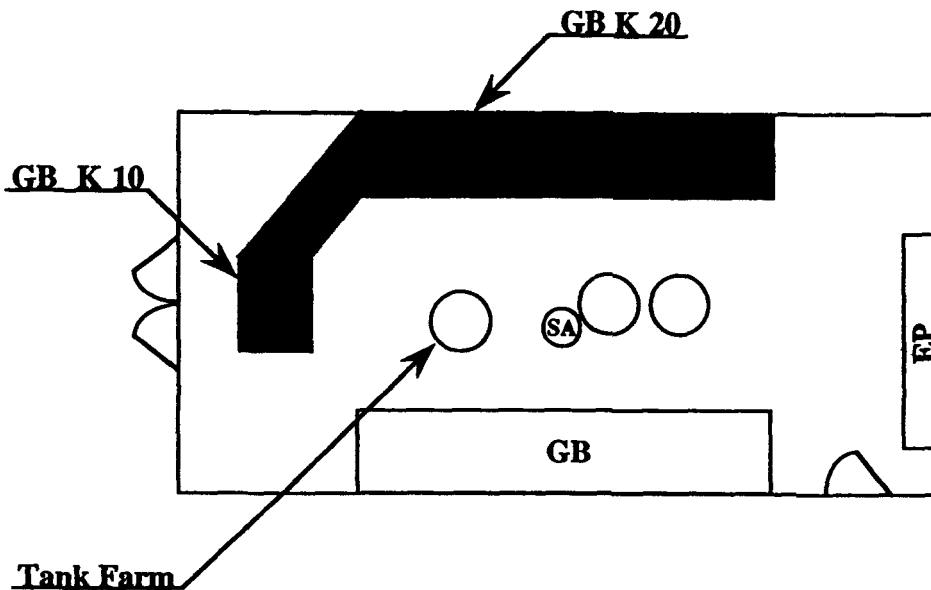
Secondary containment capability.
Typical inventory = 56 liters
Secondary containment area = 14 sf
Minimum berm height = 0.3 in



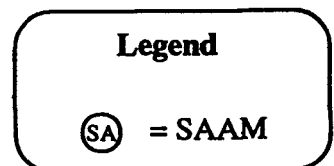
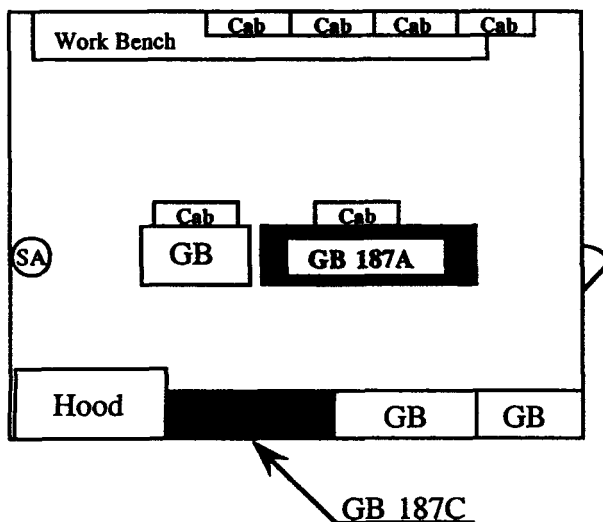
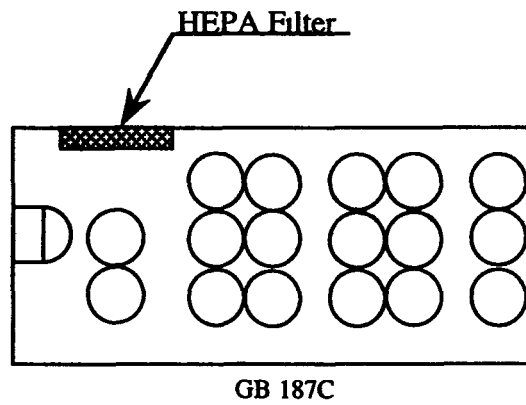
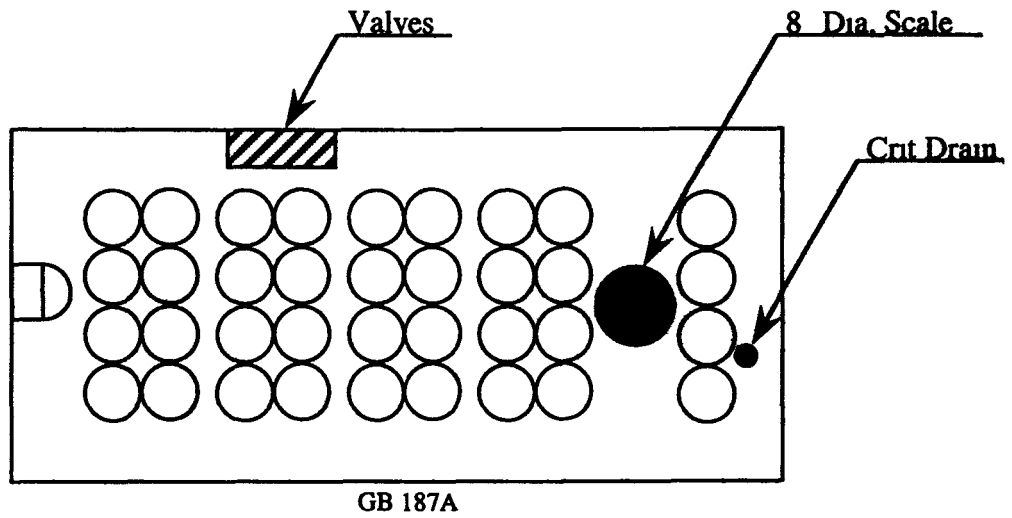
Secondary containment capability.
Typical inventory = 160 liters
Secondary containment area = 28 sf
Minimum berm height = 0.4 in

NOTES

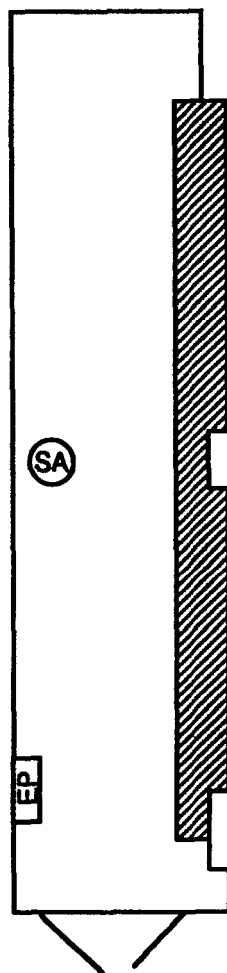
- 1) Actual container arrangement may vary
- 2) In the unlikely event the criticality drain were to overflow excess liquid will be directed to the floor of the room
- 3) Container storage in GBox K 20 may occur on and below the shelf in the rear of the glovebox



**RCRA Unit 771 1, Room 187
Container Storage Area
(Gloveboxes)**



**RCRA Unit 771 1
Room 146C
Container Storage
(Vault)**

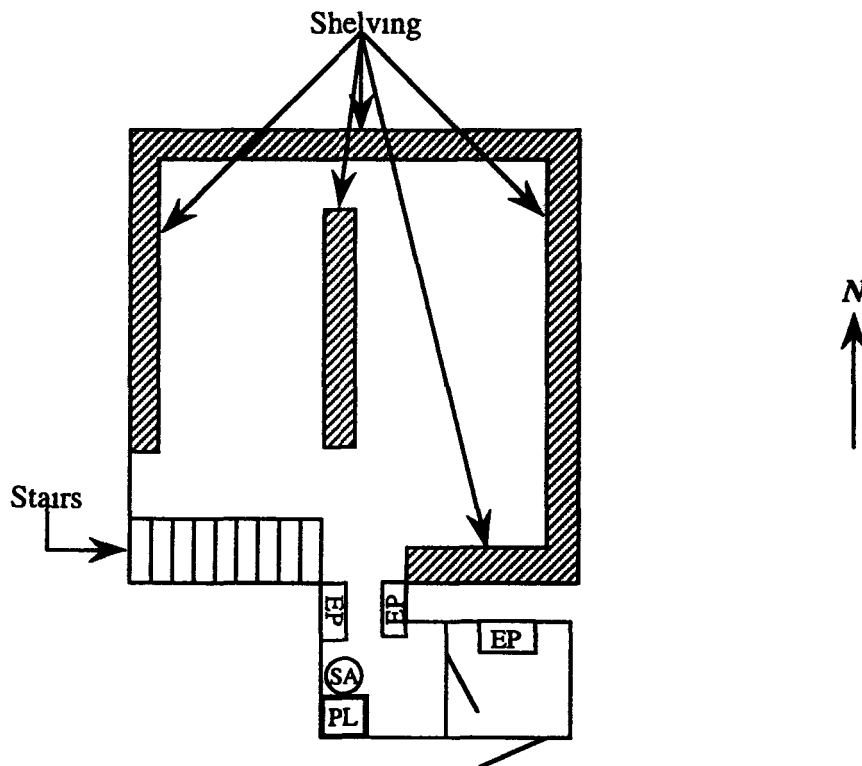


Container storage occurs in seventy (70) fixed positions on the shelf that is cross hatched.

NOTES

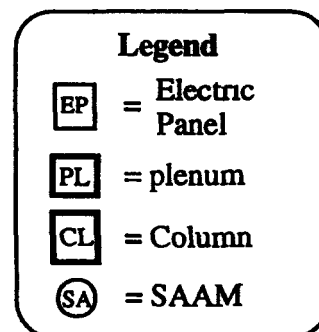
- 1) SAAM location is provided for information only and is subject to change

RCRA Unit 771 1
Room 184
Container Storage Area
(Vault)



NOTES

- 1) Containers may be placed into one hundred twenty (120) fixed positions for can storage on the lower shelves. The mezzanine level is for the storage of non hazardous material only.
- 2) The SAAM location is provided for information only and are subject to change.



III 408

UNIT INFORMATION SHEET

20 Unit 774.1

Unit Description	Building 774 is a concrete building located adjacent to Building 771 on the north side of the facility. Container storage occurs in Room 241 of Building 774.
Maximum Capacity	5 225 gallons
Liquid Capacity	5 225 gallons
EPA Waste Codes	D001 D002 D004 D011 D018 D019 D028 D035 D038 D040 D043 F001 F003 F005 F007 F009
Waste Types	Mixed Hazardous
Special Unit Conditions	

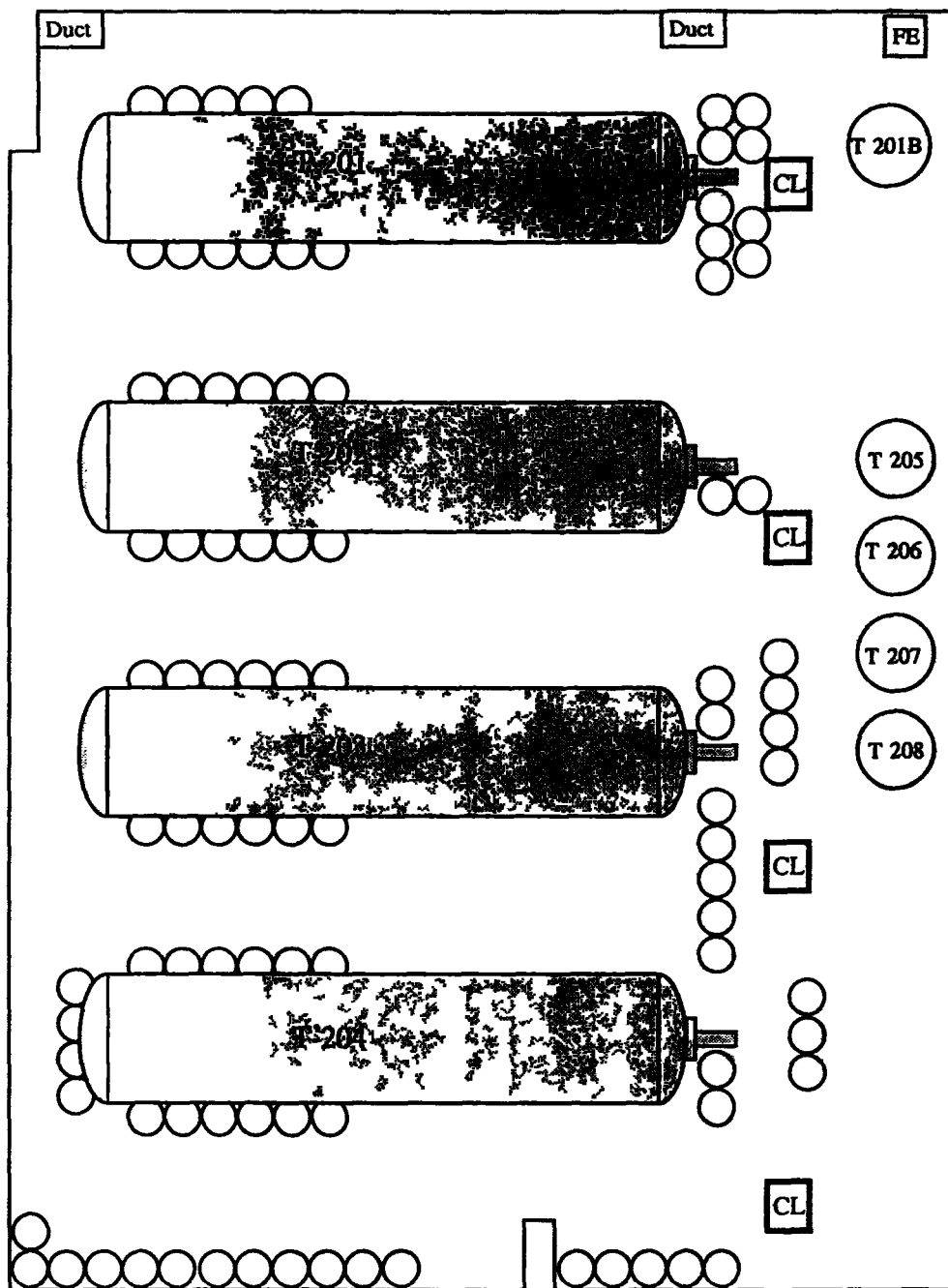
- 1) Any hazardous or mixed waste stored in this unit that is incompatible with the waste stored in the tanks must be separated from the tank or protected from the contents of the tanks by means of a dike, berm, wall or other physical device.

February 6 1997

III 41

181

**RCRA Unit 774 1
Building 774 Room 241**



Secondary Containment Calculations

A = Net floor area = 2 885 6 sq ft
 Total volume of drums = 5 225 gallons
 B = 10% volume of drums = 522 5 gallons = 69 85 cu ft
 Min berm height = B/A X 12 in./ft = 0 3in

Unit Capacity
 (Typical Inventory)
55 gallon drums
 95

Note

- 1) Boundary for containment is the perimeter of Room 241
- 2) Drawing shows a typical container layout
 Actual arrangement and combination of container types may vary

Legend

CL = Column

III 41 a

18

UNIT INFORMATION SHEET

21 Unit 776.1

Unit Description Building 776 is located north of Building 707 which contains multiple storage areas comprised of rooms and fenced areas within rooms

Maximum Capacity 173 791 gallons
Liquid Capacity 20 075 gallons

EPA Waste Codes See specific waste codes below for each type of container storage area

Waste Types Mixed Hazardous

Special Unit Conditions

Container Storage Areas Within Unit 776 1

a Room and fence type areas

The following EPA waste codes apply globally to the room" and "fence type areas within this container storage unit. The individual areas that are used for container storage in this unit follow the listing of the approved EPA waste codes. Typical container arrangement diagrams are provided after the listing of the individual room and fence type areas.

EPA Waste Codes	D001 D011 D018 D019 D021 D029 D033 D035 D040 D043 F001 F003 F005 F009 P011 P012 P014 P015 P022 P028 P030 P045 P062 P076 P087 P098 P101 P104 P106 P113 P116 P119 P121 U002 U004 U019 U031 U037 U041 U044 U055 U057 U067 U071 U074 U075 U077 U079 U080 U084 U098 U102 U107 U108 U112 U120 U123 U127 U131 U133 U134 U138 U144 U148 U151 U154 U158 U162 U165 U167 U169 U170 U188 U190 U191 U196 U201 U204 U207 U209 U211 U213 U220 U225 U228 U236 U239 U246 U328 U353 U359
-----------------	--

Room 127

Maximum capacity 56 980 gallons
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations None

Rooms 134 154 and 159

Maximum capacity 102,236 gallons
Liquid capacity 5 500 gallons

Waste types LLM TRM Mixed residues

Area limitations

- 1) The Airlock and Manual Disassembly Areas of the Advanced Size Reduction Facility are considered part of this container storage area and as such may be used for the storage of regulated wastes

Room 208

Maximum capacity 2 750 gallons
Liquid capacity 2 750 gallons

Waste types LLM

Area limitations None

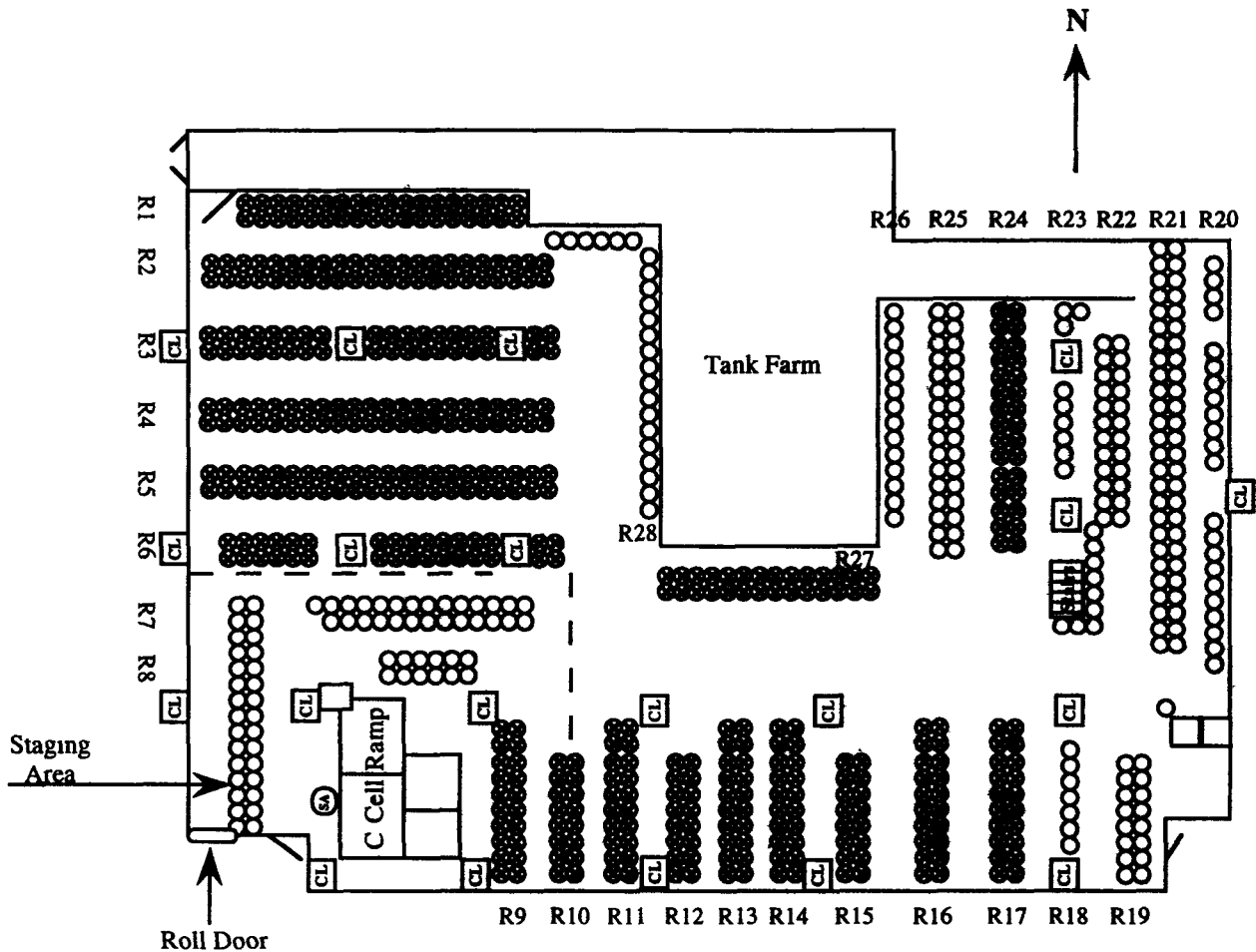
Room 237

Maximum capacity 10 010 gallons
Liquid capacity 10 010 gallons

Waste types LLM

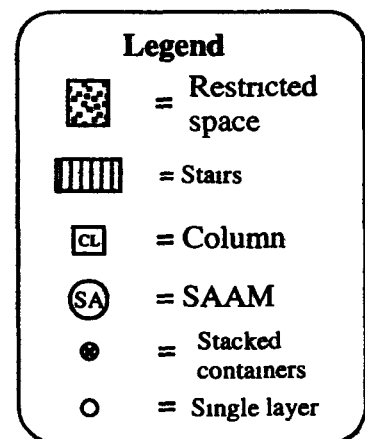
Area limitations None

**RCRA Unit 776 1
Container Storage Area
Building 776, Room 127**



NOTES

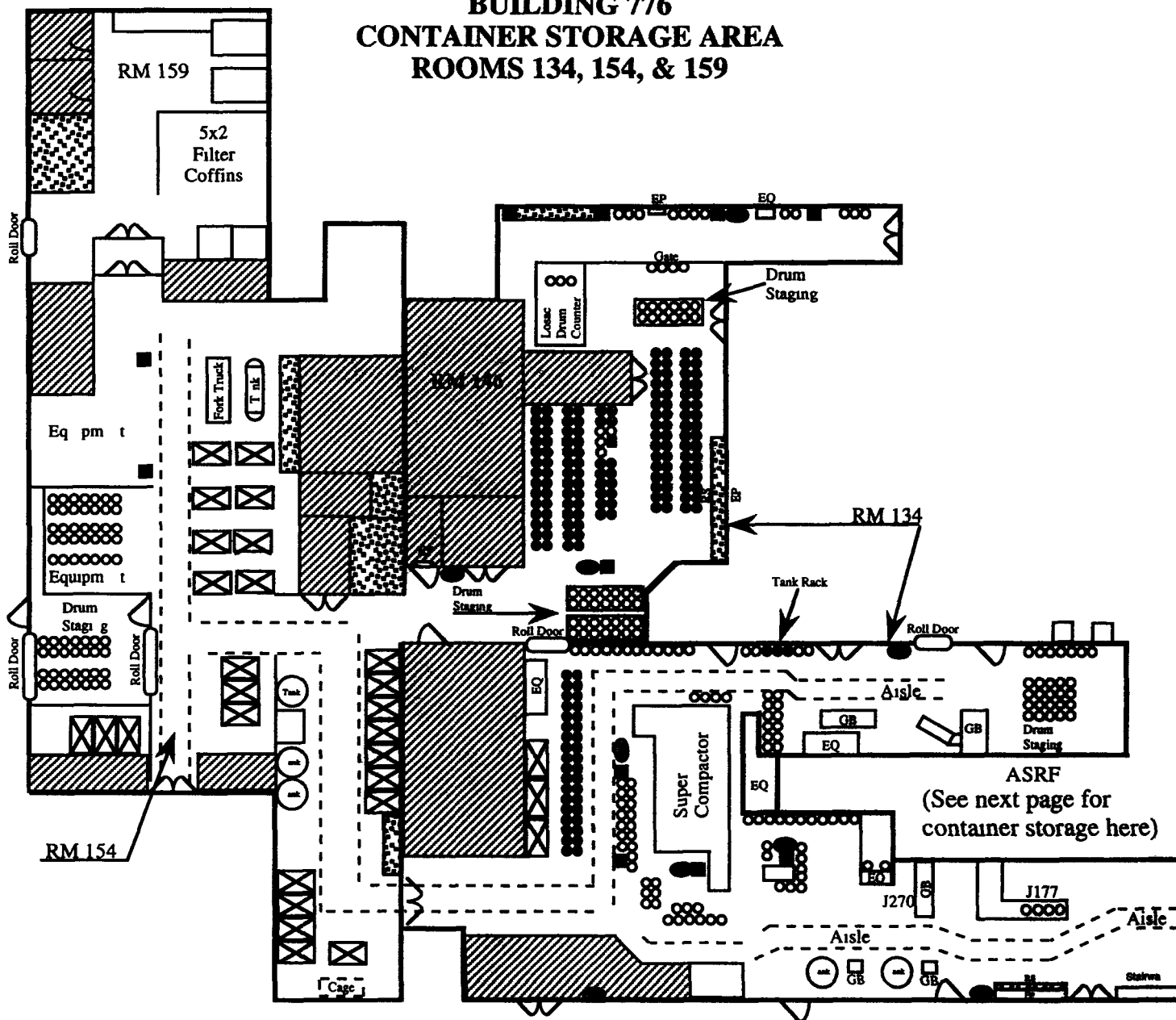
- 1) Typical container layout actual arrangement may vary
- 2) SAAM locations are provided for information only and are subject to change
- 3) Tank farm is physically separated from the container storage area by lead shielding and a berm



185

III 43a

**RCRA UNIT 776 1
BUILDING 776
CONTAINER STORAGE AREA
ROOMS 134, 154, & 159**

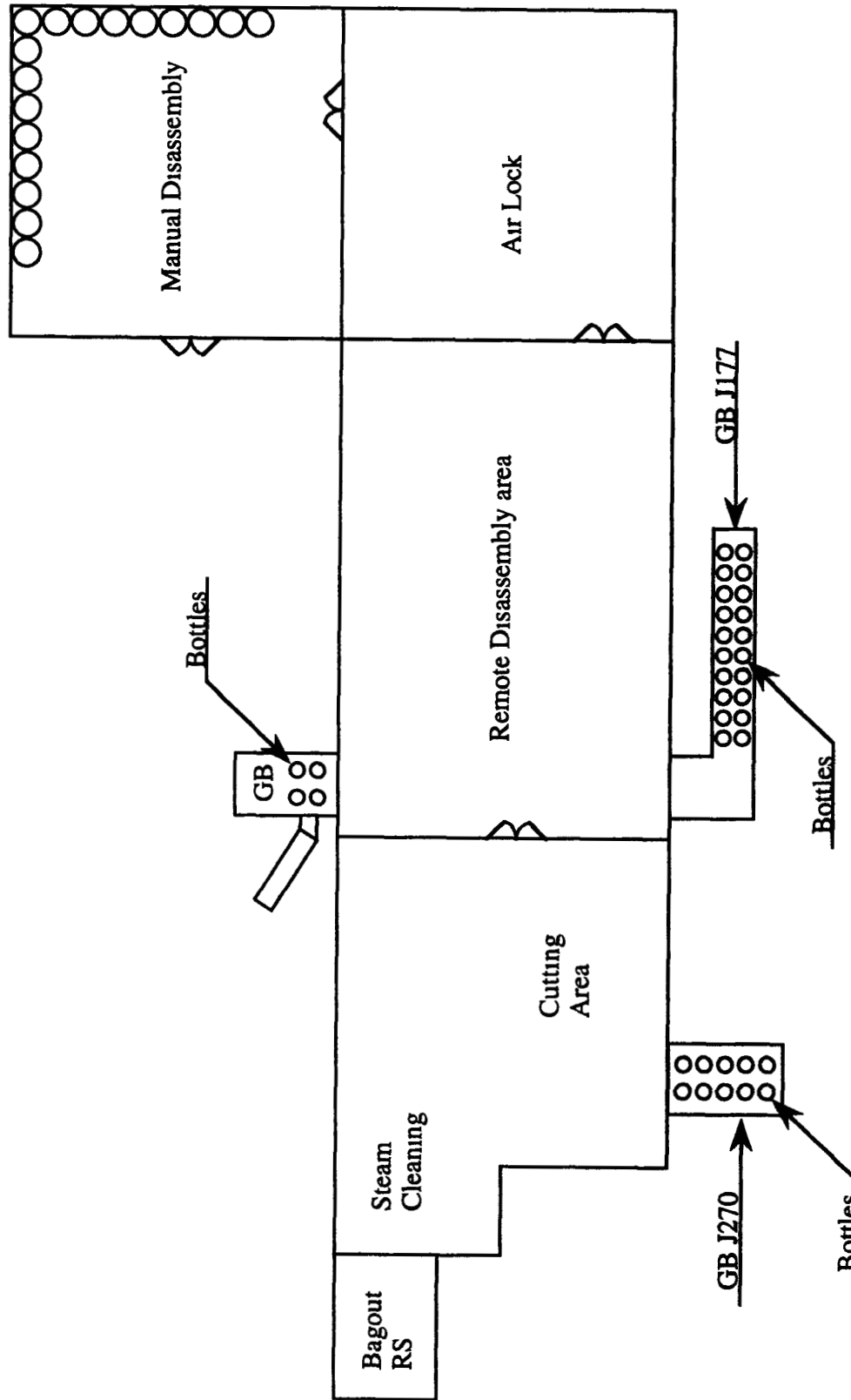


NOTES 1) Typ cal contain layout, ctual rrangem t may ary
2) SAAM locations are pro ded f nf rmation only and re subj t to ch ge.

Legend

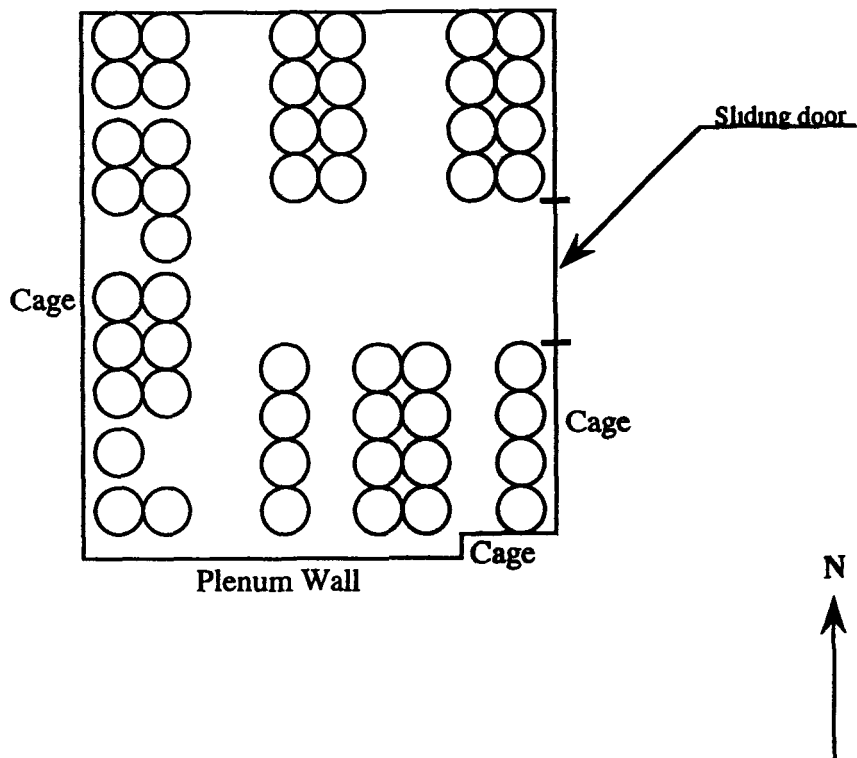
- Cage Area
- Column
- ▨ Restricted Space
- SAAM Location
- ▤ Non Permitted Areas

RCRA Unit 776 1
 Building 776
 Container Storage Area
 ASRF



III 43C

**RCRA Unit 776 1
Container Storage Area
Building 776, Room 208**



Secondary Containment Capability.

Typical inventory = 50 drums

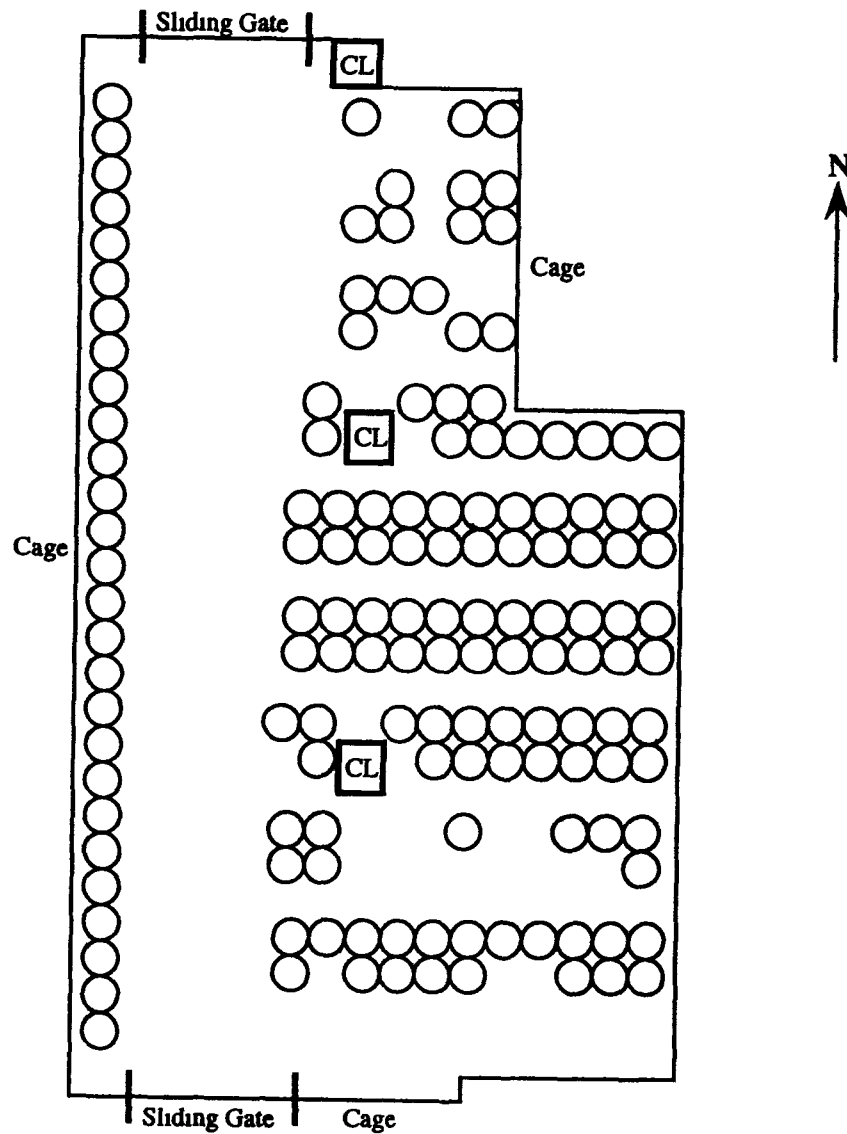
Total floor area = 388 sf

Minimum berm height = 1 9 in

NOTES

- 1) Typical container layout actual arrangement may vary

RCRA Unit 776 1
Container Storage Area
Building 776, Room 237



Secondary Containment Capability.
 Typical inventory = 182 drums
 Total floor area = 1 389 sf
 Minimum berm height = 1 5 in

NOTES

1) Typical container layout, actual arrangement may vary

III 43e

Legend

CL = Column

189

UNIT INFORMATION SHEET

22 Unit 777.1

Unit Description	Building 777 is a building which adjoins Building 776 This unit contains multiple storage areas consisting of rooms fenced areas within rooms and vaults
Maximum Capacity	26 871 gallons
Liquid Capacity	330 gallons
EPA Waste Codes	See specific waste codes below for each type of container storage area
Waste Types	Mixed hazardous
Special Unit Conditions	As noted in the following

Container Storage Areas Within Unit 777 1

a Room and fenced type areas

The following EPA waste codes apply globally to the room and fenced type areas within this container storage unit The individual rooms that are used for container storage in this unit follow the listing of the approved EPA waste codes Typical container arrangement diagrams are provided after the listing of the individual room and fence type areas

EPA Waste Codes	D001 D011 D019 F001 F003 F005 F007 F009 U239
-----------------	--

Room 208 Area 10

Maximum capacity	3 905 gallons
Liquid capacity	N/A
Waste types	TRM Mixed residues
Area limitations	None

Room 430 Area 2

Maximum capacity	4 565 gallons
Liquid capacity	N/A
Waste types	TRM Mixed residues
Area limitations	None

Room 430 Area 3

Maximum capacity	9 240 gallons
Liquid capacity	N/A
Waste types	TRM Mixed residues
Area limitations	None

Room 432C

Maximum capacity	330 gallons
Liquid capacity	330 gallons
Waste types	LLM TRM Mixed residues
Area limitations	

- 1) Continuous monitoring for tritium will be conducted in this area
- 2) This area will be inspected by observing the containers through a window to ensure the containers are in good condition
- 3) At a minimum of every six months each container will be physically inspected to verify the integrity of the container and the absence of leaks and/or spills

Room 483 Area 8

Maximum capacity	8 525 gallons
Liquid capacity	N/A
Waste types	TRM Mixed residues
Area limitations	None

b Vault type areas

The following EPA waste codes apply globally to the vault type area within this container storage unit

EPA Waste Codes	D003 D011 F001 F003 F005
-----------------	--------------------------

Non Destructive Testing Vault

Area type	Vault
Maximum capacity	306 gallons
Liquid capacity	N/A
Waste types	TRM Mixed residues

Area limitations

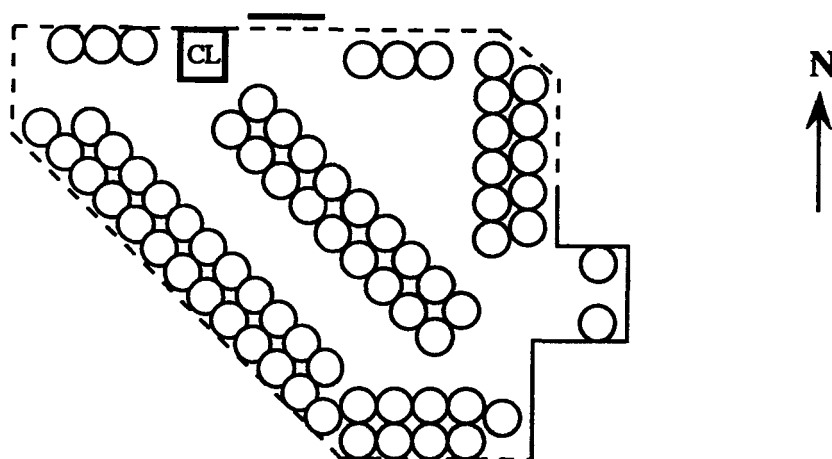
- 1) This area is subject to inspection by remote radiation monitoring. In addition, a bi monthly inspection of a randomly selected portion of the containers and an annual 100% inspection which is coordinated with routine nuclear material accountability inventories will be conducted.

February 6, 1997

III 46

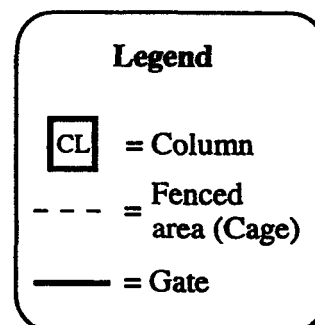
192

RCRA Unit 777 1
Container Storage Area (fenced area)
Building 777, Room 208, Area 10

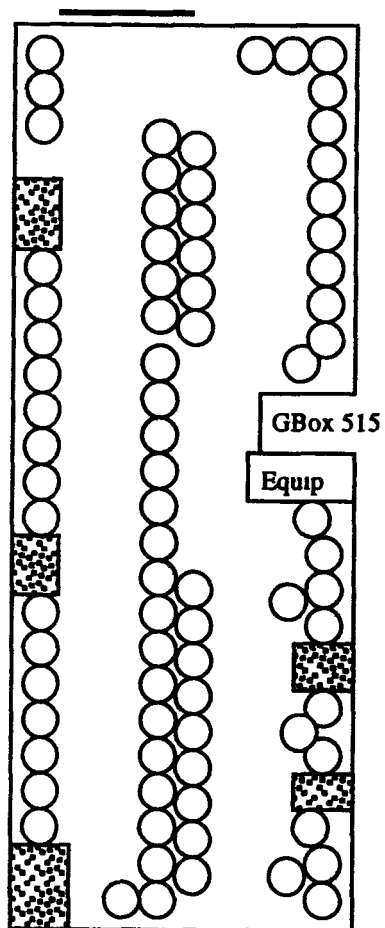


NOTES

- 1) Typical container layout, actual arrangement may vary

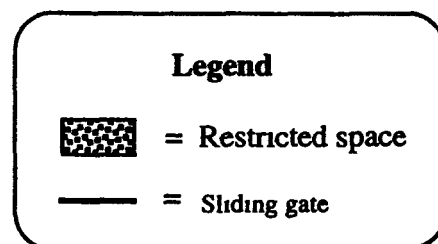


RCRA Unit 777 1
Container Storage Area (fenced area)
Building 777, Room 430, Area 2

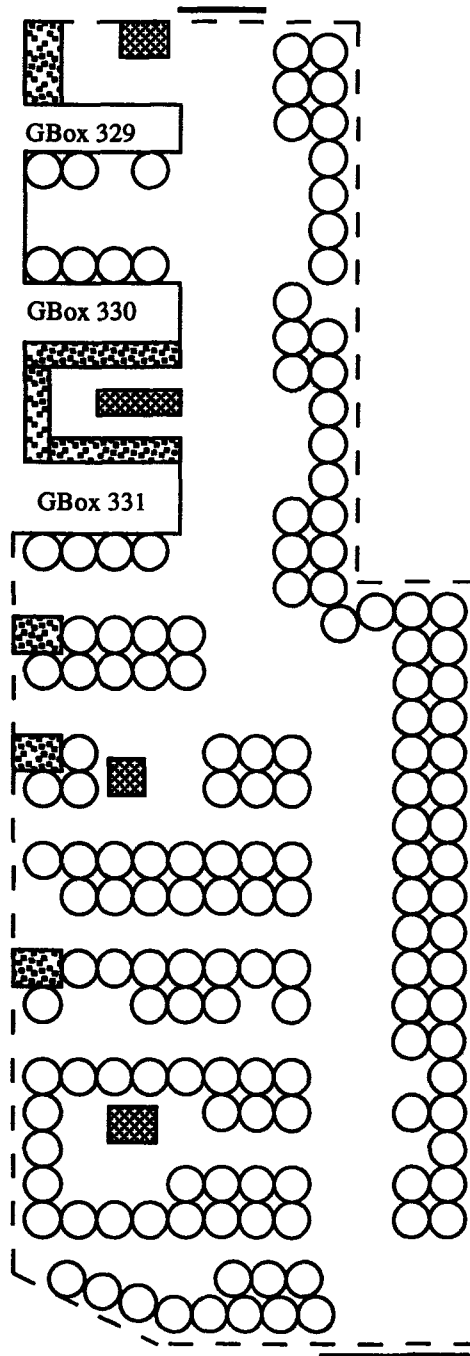


NOTES




- 1) Typical container layout actual arrangement may vary



RCRA Unit 777 1
Container Storage Area (fenced area)
Building 777, Room 430, Area 3



Legend

-  = Physical obstruction
-  = Restricted space
-  = Sliding gate

NOTES

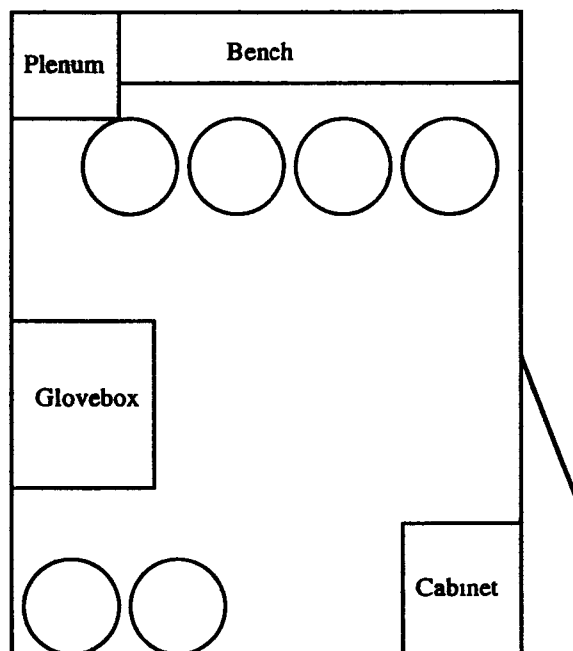
- 1) Typical container layout actual arrangement may vary
- 2) Gloveboxes are out of service Gloves have been removed and replaced with boots except where noted by restricted space

195

III 46C

BAH
03/05/97

RCRA Unit 777 1
Container Storage Area
Building 777, Room 432C



Secondary containment capability.

Typical inventory = 6 55 gal containers

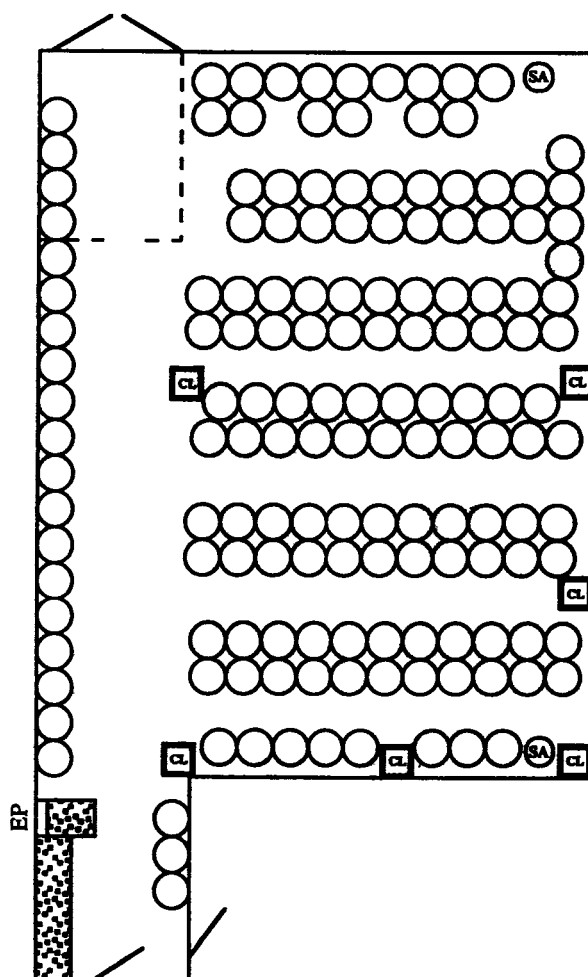
Total floor area = 142 sf

Minimum berm height = 0 8 in

NOTES

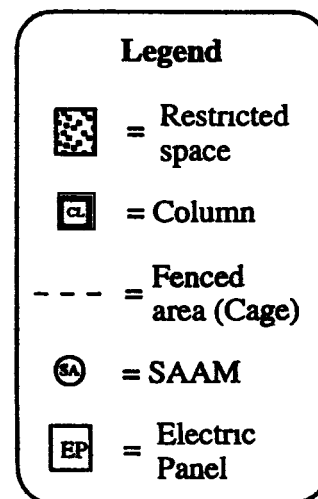
- 1) Typical container layout actual arrangement may vary

RCRA Unit 777 1
Container Storage Area (fenced area)
Building 777, Room 483, Area 8

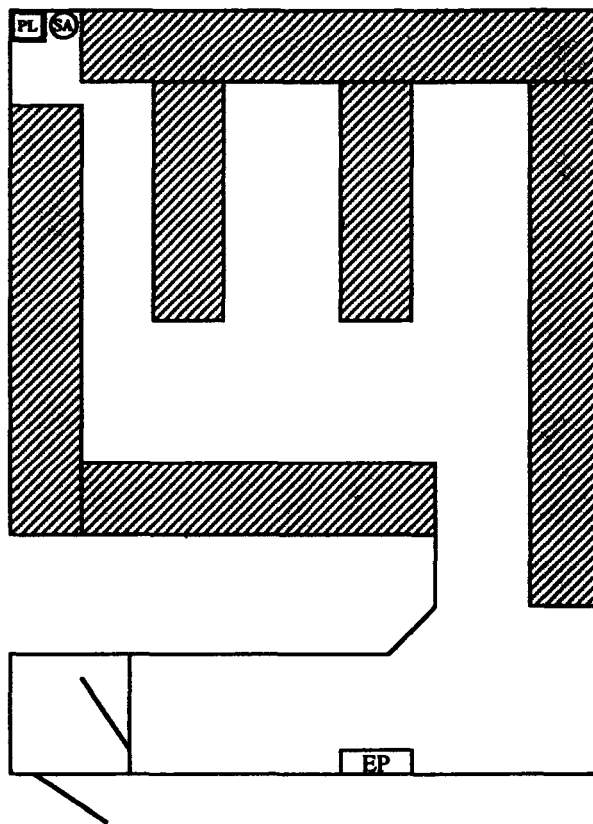


NOTES

- 1) Typical container layout actual arrangement may vary
- 2) SAAM locations are provided for information only and are subject to change

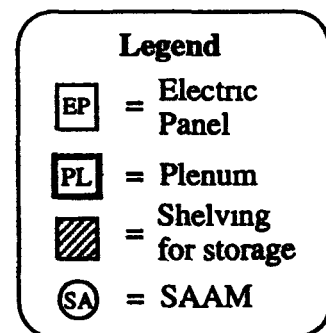


RCRA Unit 777 1
Container Storage Area (Vault area)
Building 777, NDT Vault



NOTES

- 1) There are two hundred eighty eight (288) fixed positions for can storage on the lower level of the shelves
 The mezzanine is for the storage of non regulated material only
- 2) The SAAM location is provided for information only and is subject to change



UNIT INFORMATION SHEET

23 Unit 779.1

Unit Description Building 779 is located on the east end of the industrial portion of the facility and contains multiple storage areas comprised of gloveboxes within rooms

Maximum Capacity 89 gallons (337 liters)
Liquid Capacity 72 gallons (273 liters)

EPA Waste Codes See specific waste codes below for each type of container storage area

Waste Types Mixed

Special Unit Conditions None

Container Storage Areas Within Unit 779 1

a Glovebox type areas

The following EPA waste codes apply globally to the glovebox type areas within this container storage unit. The individual gloveboxes that are used for container storage in this unit follow the listing of the approved EPA waste codes. Typical container arrangement diagrams are provided after the listing of the individual areas.

EPA Waste Codes D002 D011 F001 F003 F005

Room 131 Glovebox 131A 131B 131D and 131E

Maximum capacity 12 gallons each (45 liters)
Liquid capacity 12 gallons each (45 liters)

Waste types LLM TRM Mixed residues

Area limitations None

Room 137 Glovebox 106 3 106-4 and 106 5

Maximum capacity 8 gallons each (30 liters)
Liquid capacity 8 gallons each (30 liters)

Waste types LLM TRM Mixed residues

Area limitations

- 1) The lead shielding in this glovebox will be positioned so that it is not necessary to move the shielding in order to inspect the stored containers

Room 160 Glovebox 860

February 6, 1997

III 47

199

Maximum capacity 17 gallons (64 liters)
Liquid capacity N/A

Waste types TRM Mixed residues

Area limitations

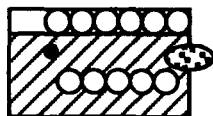
- 1) The door to each storage bin will not be opened during routine inspections of this glovebox. Instead containers will be inspected concurrently on a bimonthly basis during nuclear material accountability inspections in accordance with the Nuclear Materials Safeguards Procedure Manual

February 6 1997

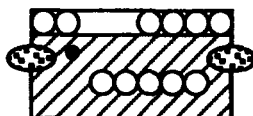
III 48

200

RCRA Unit 779 1 - Container Storage Area (Gloveboxes) **Building 779, Room 131**

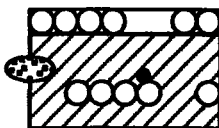


GBox 131A



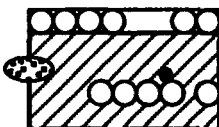
GBox 131B

Secondary containment capability.
 Typical inventory = 11 4-liter containers each
 Total surface area = 9 sf each
 Minimum berm height = 0 6 in



GBox 131E

Secondary containment capability.
 Typical inventory = 11 4 liter containers
 Total surface area = 10 sf
 Minimum berm height = 0 5 in

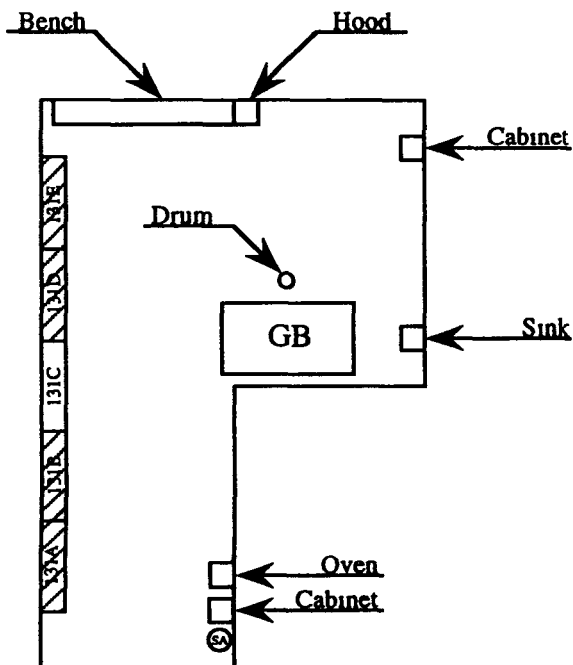


GBox 131D

Secondary containment capability.
 Typical inventory = 11 4 liter containers
 Total surface area = 9 sf
 Minimum berm height = 0 6 in

NOTES

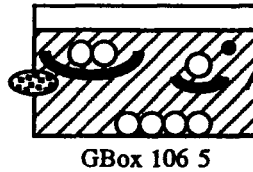
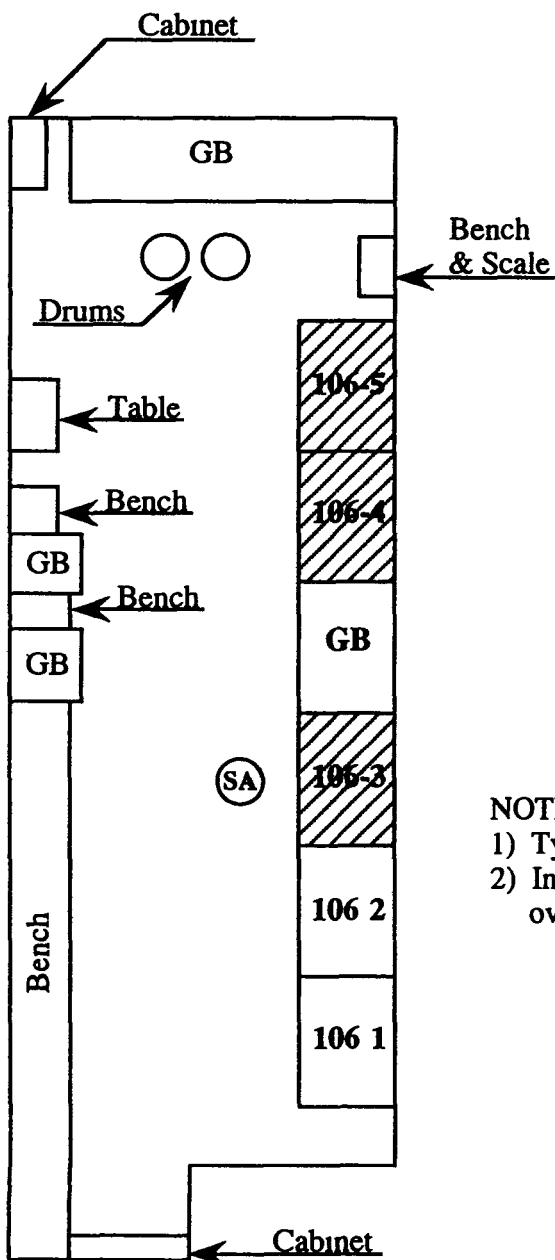
- 1) Typical container layout, actual arrangement may vary
- 2) In the unlikely event the criticality prevention drain were to overflow the excess liquid would drain to the floor of the room



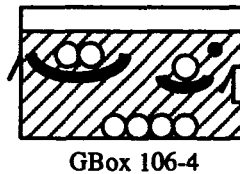
Legend

- Restricted space
- Criticality drain

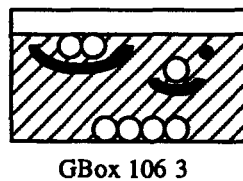
**RCRA Unit 779 1 Container Storage Area (Gloveboxes)
Building 779, Room 137**



Secondary containment capability.
Typical inventory = 7 4-liter containers each
Total surface area = 10 sf each
Minimum berm height = 0.2 in



Secondary containment capability.
Typical inventory = 7 4-liter containers each
Total surface area = 10 sf each
Minimum berm height = 0.2 in



Secondary containment capability.
Typical inventory = 7 4 liter containers each
Total surface area = 10 sf each
Minimum berm height = 0.2 in

NOTES

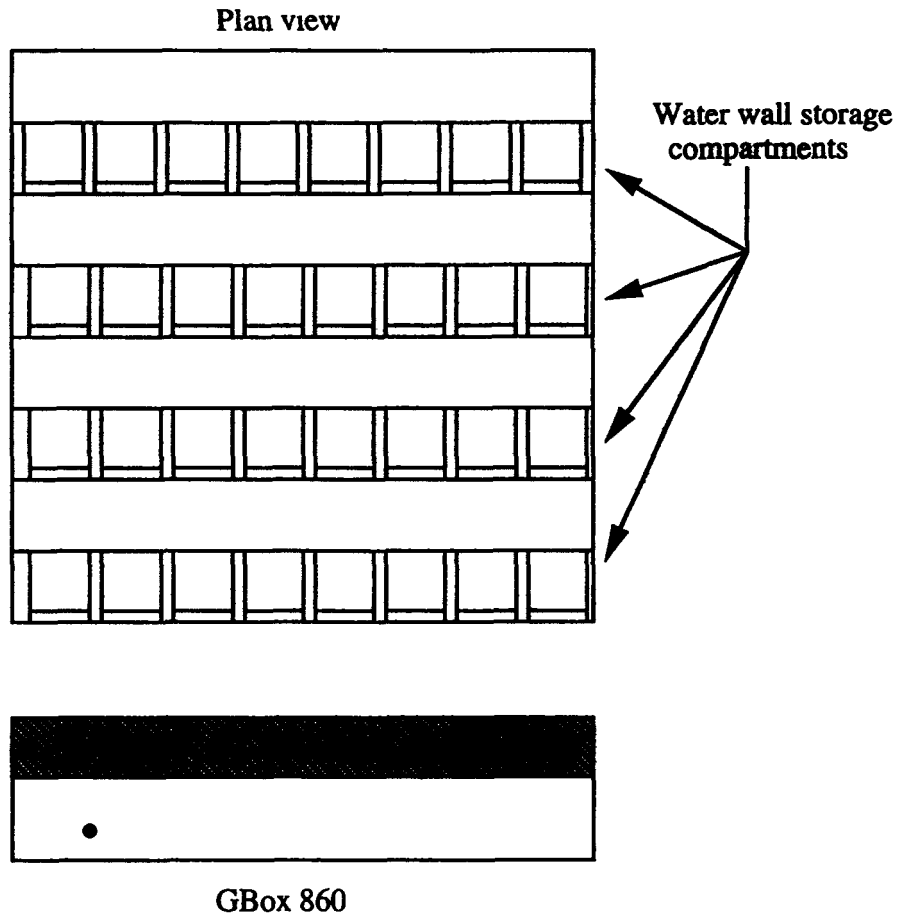
- 1) Typical container layout actual arrangement may vary
- 2) In the unlikely event the criticality prevention drain were to overflow the excess liquid would drain to the floor of the room

Legend

- = Restricted space
- = Criticality drain
- = Lead shielding

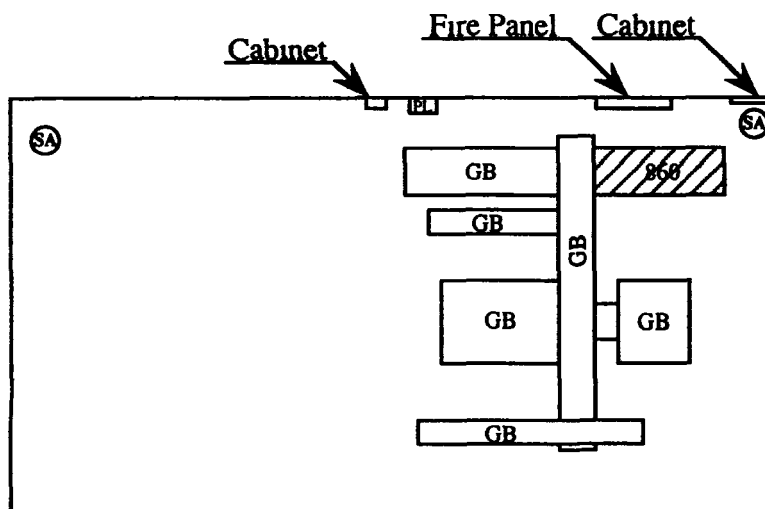
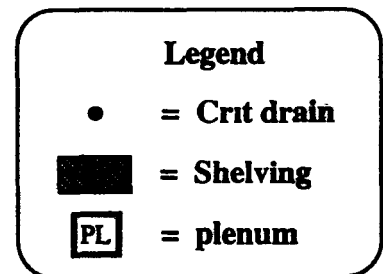
202

**RCRA Unit 779 1 Container Storage Area (Glovebox)
Building 779, Room 160**



NOTES

- 1) There are eight storage locations on each of the four shelves for a total storage capacity of 32 containers
- 2) In the unlikely event the criticality prevention drain were to overflow the excess liquid would drain to the floor of the room



203

III 48c

ATTACHMENT 1

Unit 993 1 - Unit Specific Conditions

Unit 993 1
Building N/A
Room N/A
Type Special Material Storage Enclosure
Unit Description Unit 993 1 is a skid mounted metal enclosure with outside dimensions of 5 5 feet by 7 feet by 7 feet located near Bunker Number 1 south and east of Building 993

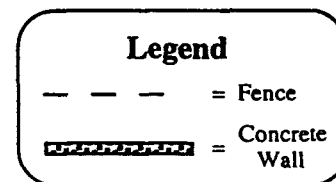
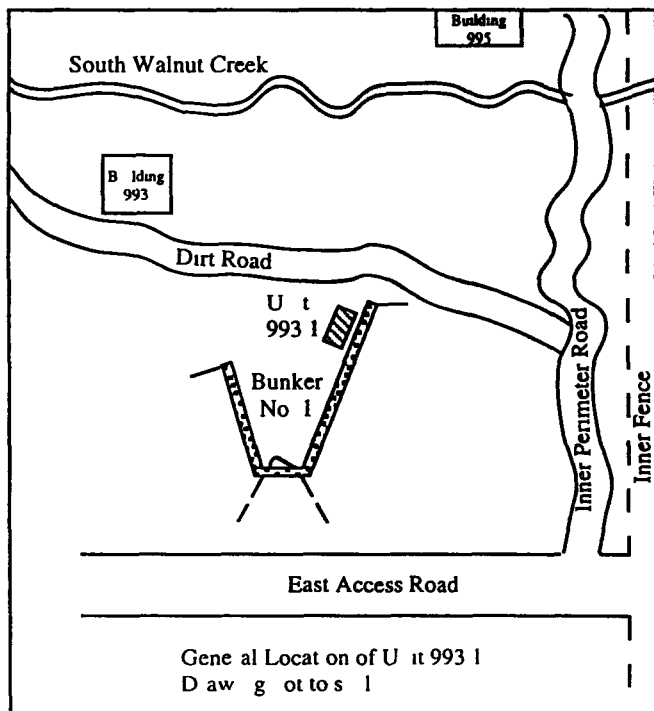
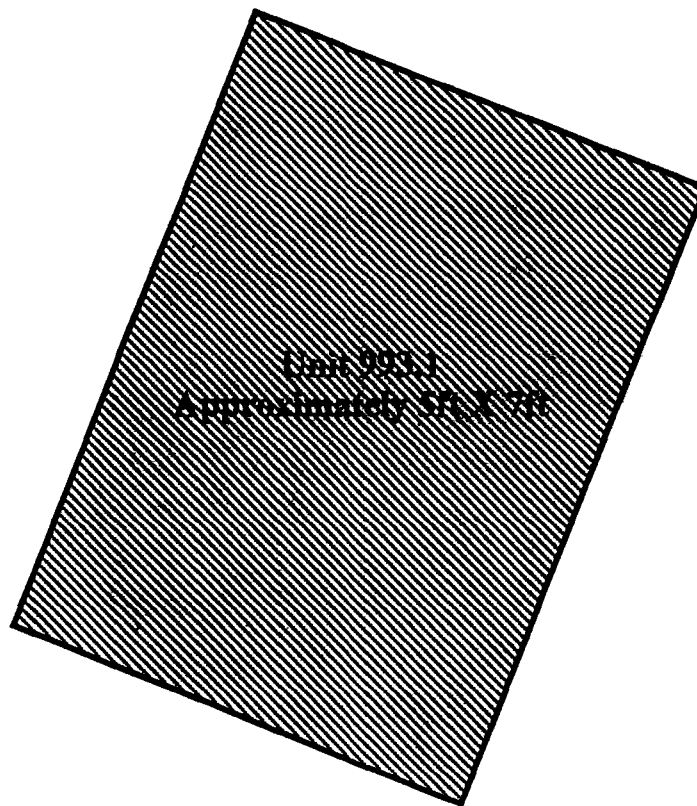
Waste Codes D001 D003 D004 D005 D006 D007 D008 D009
 D010 D011 D012 D018 D019 D021 D022 D024
 D025 D026 D028 D029 D035 D036 D038 D040
 D041 D042 P011 P012 P014 P016 P022 P027 P028
 P077 P093 P113 P116 P119 P120 P123 U002 U003
 U009 U012 U018 U019 U027 U028 U031 U037
 U041 U042 U044 U052 U053 U055 U056 U057
 U067 U068 U069 U070 U071 U072 U077 U078
 U079 U080 U081 U083 U098 U102 U103 U106
 U107 U108 U112 U113 U116 U118 U120 U122
 U123 U124 U131 U134 U137 U138 U144 U145
 U147 U148 U151 U154 U159 U160 U161 U162
 U165 U166 U169 U170 U188 U190 U191 U196
 U197 U201 U204 U207 U209 U210 U211 U214
 U215 U216 U217 U218 U219 U220 U221 U222
 U225 U226 U228 U234 U238 U239 U240 U328
 U353

Waste Descriptions Liquid and solid hazardous and mixed wastes
Maximum Capacity 400 Liters
Liquid Capacity Limit 400 Liters
Secondary Containment Catch basin to contain 100% of liquid waste stored in Unit
Minimum Berm Height N/A
Aisle Spacing Standard
Stacking Monolayer on floor and shelves
Inspection Method Visual
Drawing Number N/A
Unit Specific Conditions None

204

III-49

RCRA Unit 993 1



PART IV TANK SYSTEMS

TABLE OF CONTENTS

A INTRODUCTION	IV 1
B TANK SYSTEMS STANDARD CONDITIONS	IV 1
1 Types of Permitted Tanks	IV 1
2 Containment and Detection of Releases	IV 1
3 Compatibility of Tank Systems and Wastes	IV 2
4 Spill and Overfill Prevention	IV 2
5 Feed Mechanism Pressure Controls and Temperature Controls	IV 3
6 Management of Ignitable and Reactive Wastes	IV-4
7 Inspections	IV-4
8 Recordkeeping and Reporting	IV-4
9 Response to Leaks or Spills	IV 5
10 Repair and Certification of Tank Systems	IV 6
C TANK SYSTEMS UNIT SPECIFIC CONDITIONS	IV 6
1 Unit 750 2A	IV 7
2 Unit 750 2B	IV 9
3 Unit 750 2C	IV 11
4 Unit 774 2	IV 13
D AQUEOUS WASTE COLLECTION SYSTEM FOR TREATMENT	IV 14
1 Collection Tanks	IV 14
a Unit 776 2	IV 17
b Unit 887 2	IV 18
2 Aqueous Waste Transfer System	IV 14

LIST OF FIGURES

Figure IV 1	RCRA Tank Storage Unit 750 2A Tent 3 750 Pad	IV 8
Figure IV 2	RCRA Tank Storage Unit 750 2B Tent 4 750 Pad	IV 10
Figure IV 3	RCRA Tank Storage Unit 750 2C Tent 6 750 Pad	IV 12
Figure IV-4	RCRA Tank Storage Unit 774 2 Building 774	IV 14

PART IV TANK SYSTEMS

A INTRODUCTION

Part IV of the permit establishes specific conditions for the operation of tank systems. Section B of Part IV contains standard conditions for tank systems while Section C contains unit specific conditions.

The tank systems in this permit are grouped together based on the physical structures they are located within. For the tank systems identified the physical structures are either tents or buildings. Additional unit specific information concerning tanks which function primarily as part of treatment processes is provided in Part V Treatment Units.

B TANK SYSTEMS STANDARD CONDITIONS

1 Types of Permitted Tanks

The Permittee may store RCRA regulated hazardous wastes in the below listed types of tanks.

- a Double walled. A tank designed and constructed as an integral structure (i.e. an inner tank enveloped within an outer shell) so that any release from the inner tank is contained by the outer shell.
- b Annular. A tank in which liquid is contained between the inner and outer walls; the core interior is hollow. This type of tank is designed for the storage of radioactive liquids.
- c Standard. A single wall tank manufactured of non-earthen materials that provide structural support.

2 Containment and Detection of Releases

The Permittee will provide secondary containment for all tanks included in this permit.

- a Secondary containment may be provided by one or more of the following types:
 - i Secondary tank. A rigid containment material surrounding each tank to isolate any leaked wastes or other accumulated liquids from the surface on which the tanks are placed (e.g. the outer wall on a double wall tank). The containment tank will be constructed of the same or similar material as the tanks which will be compatible with the contents of the tank and will be maintained in good condition free of cracks and gaps that could impair its effectiveness as containment and allow the migration of contaminants to the environment.
 - ii Coated concrete. The area will be surrounded by a berm or wall which meets the minimum berm height identified for the unit. The floor and berm or wall of this type of secondary containment structure will be maintained in good condition free of cracks and gaps that could impair its effectiveness as containment and allow the migration of contaminants to the environment.

The concrete will be coated with epoxy or another coating which offers similar protection and is compatible with the waste to be managed in the tank system. The coating will cover the entire floor and berm or wall as necessary to provide adequate secondary containment. Unless otherwise specified the berms or walls will completely surround the perimeter of the tank system.

- iii Catch basins Catch basins providing secondary containment will be constructed of metal HDPE fiberglass or stainless steel or other appropriate material and maintained in good condition free of cracks and gaps that could impair its effectiveness as containment and allow the migration of contaminants to the environment. Catch basins constructed of material other than fiberglass HDPE or stainless steel will be coated with epoxy or other coating compatible with the waste to be managed in the tank system or lined with a material offering similar protection.
- b Ancillary equipment consisting of above ground piping with welded flanges welded joints or welded connections that are visually inspected for leaks each operating day do not require secondary containment. Welded flanges include flanges which are welded to the pipe but connected to the abutting flange with bolts. All other ancillary equipment will be provided with secondary containment.
- c Releases into secondary containment will be detected by visual inspections liquid sensing instruments or radiation monitoring instruments. Releases from tank systems or precipitation which has accumulated within secondary containment structures will be removed within 24 hours from detection or in as timely a manner as possible. Any material removed from the collection systems must be characterized and managed appropriately.

3 Compatibility of Tank Systems and Wastes

The Permittee may place in a tank system only those waste types identified for that tank system in Part IV Section C Tank Systems Unit Specific Conditions. The Permittee may not store hazardous waste in permitted tanks that are not compatible with the materials of construction of the affected tank. The Permittee shall not place hazardous wastes in any tank system if the waste could cause the tank, its ancillary equipment or a containment system to rupture leak corrode or otherwise fail.

The Permittee will not store a waste mixture in a tank which has an average specific gravity exceeding the design specific gravity of the tank. Each tank will be labeled with any applicable waste specific gravity or fill height limitations. The Permittee will not place any new waste type into a tank system unless:

- a The compatibility of the new waste type with the prior contents of the tank system is determined by analytical testing or process knowledge by the Permittee or
- b The existing tank system is cleaned or flushed to the extent necessary to ensure compatibility with the new waste type.

4 Spill or Overfill Prevention

The Permittee will use appropriate controls and practices to prevent spills and overfills from tank or containment systems.

- a Spill prevention Spill prevention is primarily maintained by hard plumbed piping

When transfer lines are not hard plumbed or when using open ended lines the Permittee will use one or more of the following spill prevention controls or an equivalent control

- i Direct monitoring The transfer is monitored continuously by process operators to prevent spills and promptly detect any that occur
 - ii Vacuum transfer A vacuum is applied to the transfer line so that liquids are moved into the line and then into the destination tank as a result of pressure differentials The vacuum transfer method aids in preventing backflow of liquids
 - iii Containment of open lines A secondary containment device such as a glovebox is used to prevent spill releases
- b Overfill prevention The Permittee will use one or more of the following overfill prevention controls or an equivalent control
- i Level indicator A device used to visually display the level of waste in a tank, if a level indicator is used for overfill prevention the indicator must be monitored during liquid waste transfers or checked prior to the transfer of waste to ensure that sufficient capacity exists in the receiving tank Level indicators include sight gauges and level meters
 - ii Automatic feed cutoff A device used to stop the flow of waste into a tank when it is filled to operating capacity or another predetermined level
 - iii High level alarm A device that detects the level of waste in a tank and that sounds an audible alarm or displays a visual alarm when the operating capacity level or another predetermined level is reached
 - iv Bypass A device or plumbing arrangement used to divert the flow of waste from the tank being filled to a second tank of sufficient capacity once the operating capacity level of the tank being filled or another predetermined level has been reached

The specific overfill prevention control for each tank system subject to this permit is identified in Part IV Section C Tank Systems Unit Specific Conditions or Part V Section C Treatment Units Unit Specific Conditions for tanks that function as a part of a treatment unit.

5 Feed Mechanism, Pressure Controls, and Temperature Controls

Unless otherwise specified in Part IV Section C Tank Systems Unit Specific Conditions all tanks will be operated at ambient pressure and temperature when storing hazardous wastes The Permittee will use one of the following feed mechanisms for tank systems or an equivalent transfer mechanism

- a Pump transfer Liquids are pumped into a tank through permanent or temporary transfer lines
- b Vacuum transfer Liquids are transferred into a tank by creating a vacuum in the receiving tank or tank system Transfer lines may be permanent or temporary

- c Gravity drain Liquids are allowed to drain by gravity through permanent or temporary transfer lines

6 Management of Ignitable or Reactive Wastes

Ignitable or reactive wastes will not be placed into a tank system which is not protected by one or more of the following signs prohibiting smoking open flames or welding an inert atmosphere blanket, or enclosed vents isolated from sources of ignition or reaction.

7 Inspections

Tank systems and their ancillary equipment will be inspected each operating day in accordance with the Site inspection plan. Inspections will be conducted to evaluate the condition of the tank and secondary containment system to check for leakage from the tank system and to check for the presence and operability of overfill prevention equipment. A typical inspection logsheet for a tank system is provided in Part VII (Procedures to Prevent Hazards) of this Permit.

8 Recordkeeping and Reporting

- a The Permittee shall report to the Director within 24 hours of detection when a release from the tank system or secondary containment system to the environment occurs however
- b Releases of one pound or less of hazardous waste that are promptly contained and cleaned up need not be reported or
- c Releases that are contained within a secondary containment system and removed within 24 hours need not be reported
- d Within 30 days of detecting a release to the environment from the tank system or secondary containment system the Permittee shall report the following information to the Director
 - i Likely route of migration of the release
 - ii Characteristics of the surrounding soil (including soil composition geology hydrogeology and climate)
 - iii Results of any monitoring or sampling conducted in connection with the release. If the Permittee finds that it will be impossible to meet the 30-day time period the Permittee should provide the Director with a schedule of when the results will be available. This schedule must be provided before the required 30-day submittal period expires
 - iv Proximity of downgradient drinking water surface water and populated areas
 - v Description of response actions taken or planned
- e The Permittee shall submit to the Director all certifications of major repairs to correct leaks within seven days of returning the tank system to use

- f The Permittee shall obtain, and keep on file at the facility the written statements by those persons required to certify the design and installation of new tank systems
- g The Permittee shall keep on file at the facility the written assessment regarding the integrity of each permitted tank.
- h The Permittee shall maintain at the facility a record of the integrity test results for each written assessment required above in Part IV B 8 g
- i The Permittee shall place the results of all waste analyses waste determinations and any other documentation showing compliance with the requirements of Part IV B 3 in the facility operating record

9 Response to Leaks or Spills

In the event of a leak or a spill from the tank system from a secondary containment system or if a system becomes unfit for use the Permittee shall remove the system from service immediately and complete the following actions

- a Stop the flow of hazardous waste into or out of the system and inspect the system to determine the cause of the release
- b Remove waste from the system within 24 hours of detection of the leak to the extent necessary to prevent further release to the environment, and to allow inspection and repair of the system If the Permittee finds that it will be impossible to meet this time period the Permittee shall notify the Director and demonstrate that a longer time period is required
- c Contain visible releases to the environment. The Permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection. (1) prevent further migration of the leak or spill to soils or surface water and (2) remove and properly dispose of any visible contamination of the soil or surface water
- d Close the system in accordance with an approved closure plan unless one of the following actions are taken
 - i For a release caused by a spill that has not damaged the integrity of the system the Permittee shall remove the released waste and make any necessary repairs to fully restore the integrity of the system before returning the tank system to service
 - ii For a release caused by a leak from the primary tank system to the secondary containment system the Permittee shall repair the primary system prior to returning it to service
 - iii For a release to the environment caused by a leak from a portion of the tank system that does not have secondary containment and can be visually inspected the Permittee shall repair the tank system before returning it to service
 - iv If the Permittee replaces a component of the tank system to eliminate the leak that component must satisfy the requirements for new tank systems or components in 6 CCR 1007 3 Section 264 192 and 264 193

10 Repair and Certification of Tank Systems

If a release occurs from a primary tank system the Permittee will repair the tank system prior to returning it to service. Major repairs will be certified by a qualified independent registered Professional Engineer. The certification will be submitted to CDPHE within seven days after returning the tank system to service and will certify that the repaired system will be capable of handling hazardous wastes without release for the intended life of the system.

C TANK SYSTEMS UNIT SPECIFIC CONDITIONS

This section contains specific information regarding the permitted tanks at the Site. In addition examples of typical configurations of the tank units subject to this permit and secondary containment capacities are provided. Operating capacities are provided for information purposes and are approximate. The Permittee shall not exceed the design capacity specified for each tank in this section.

February 6 1997

TANK UNIT INFORMATION SHEET

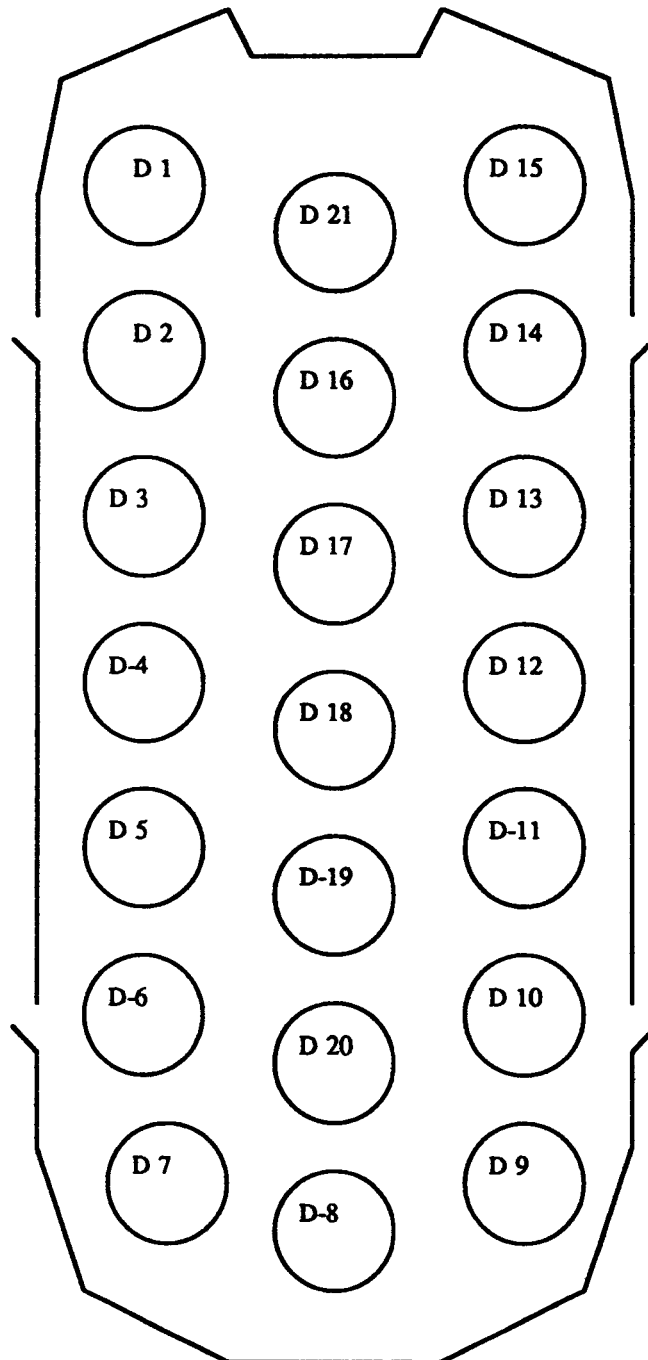
1 Unit 750.2A

Unit Description	Pond sludge storage tanks located in Tent 3 on the 750 Pad
Specific Tanks	Tanks D 1 through D 21
Tank Type	Double walled (Polyethylene)
Function	Storage
Design Capacity	11 150 gallons
Operating Capacity	10 000 gallons
Dimensions	13 feet 3 inches OD x 12 feet high
EPA Waste Codes	D006 D007 F001 F002 F005 F006 F007 F009
Waste Types	Mixed
Secondary Containment	
Type	Secondary Tank
Minimum Height	11 0 feet
Emptying	Manual
Leak Detection	Moisture sensor at the bottom of the annulus
Inspection Method	Visual/electronic sensor
Overfill Prevention	Level indicator
P&ID Drawing Number	39650 804
Special Unit Conditions	Specific gravity (SG) limits for individual tanks are as follows

Tank D-2 SG of 1 88 or fill only to 7 feet for SG up to 1 9
Tank D-3 SG of 1 54 or fill only to 7 feet for SG up to 1 9
Tank D 6 SG of 1 88 or fill only to 7 feet for SG up to 1 9
Tank D-7 SG of 1 76 or fill only to 7 feet for SG up to 1 9
Tank D-8 SG of 1 70 or fill only to 7 feet for SG up to 1 9
Tank D-9 SG of 1 80 or fill only to 7 feet for SG up to 1 9
Tank D 10 SG of 1 89 or fill only to 7 feet for SG up to 1 9
Tank D-14 SG of 1 81 or fill only to 7 feet for SG up to 1 9
Tank D 15 Limit fill height to 9 5 feet

FIGURE IV 1

**RCRA TANK STORAGE UNIT 750 2A
TENT 3, 750 PAD**



NOTES

- 1) Drawing is not to scale and may not depict the actual location of the tanks within the unit
- 2) Each tank is a double walled tank.

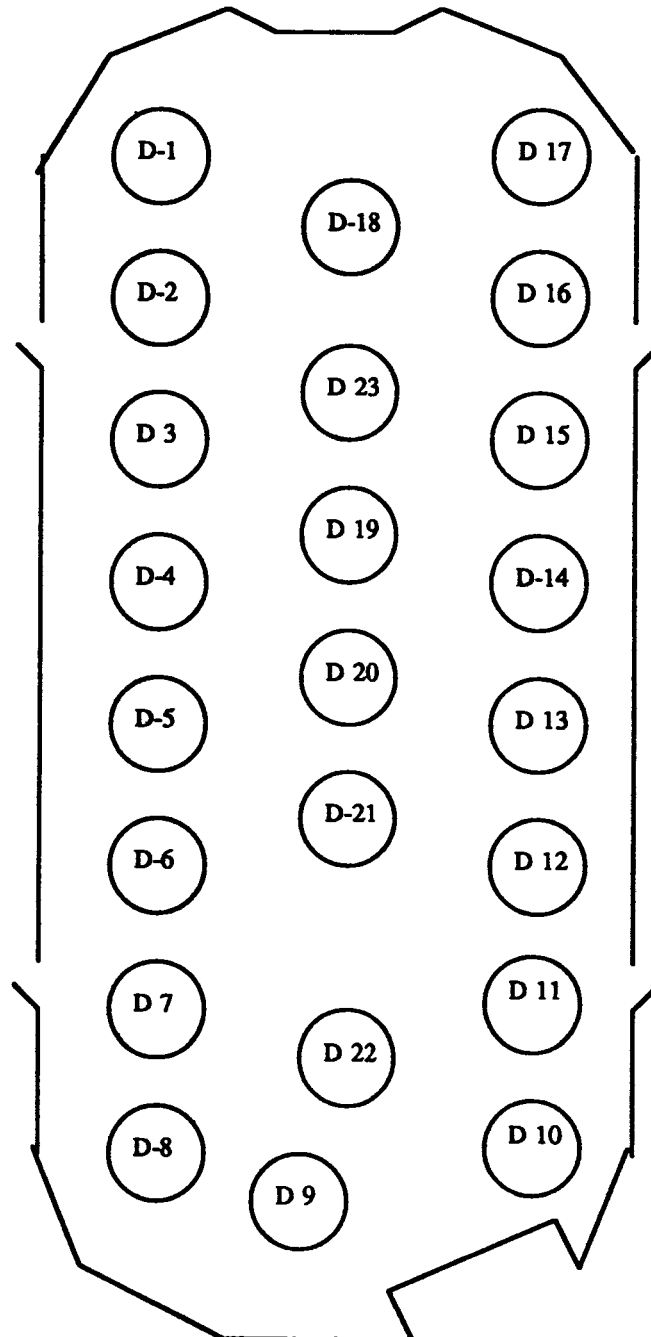
TANK UNIT INFORMATION SHEET

2 Unit 750.2B

Unit Description	Pond sludge storage tanks located in Tent 4 on the 750 Pad
Specific Tanks	Tanks D 1 through D 23
Tank Type	Double walled (Polyethylene)
Function	Storage
Design Capacity	11 150 gallons
Operating Capacity	10 000 gallons
Dimensions	13 feet 3 inches OD x 12 feet high
EPA Waste Codes	D006 D007 F001 F002 F005 F006 F007 F009
Waste Types	Mixed
Secondary Containment	
Type	Secondary Tank
Minimum Height	11 0 feet
Emptying	Manual
Leak Detection	Moisture sensor at the bottom of the annulus
Inspection Method	Visual/electronic sensor
Overfill Prevention	Level indicator
P&ID Drawing Number	39650 804
Special Unit Conditions	Specific gravity (SG) limits for individual tanks are as follows
	Tank D-7 SG of 1 85 or fill only to 7 feet for SG up to 1 9
	Tank D 11 SG of 1 81 or fill only to 7 feet for SG up to 1 9
	Tank D-13 SG of 1 89 or fill only to 7 feet for SG up to 1 9
	Tank D 14 SG of 1 73 or fill only to 7 feet for SG up to 1 9

FIGURE IV 2

**RCRA TANK STORAGE UNIT 750.2B
TENT 4, 750 PAD**



NOTES

- 1) Drawing is not to scale and may not depict the actual location of the tanks within the unit
- 2) Each tank is a double walled tank

TANK UNIT INFORMATION SHEET

3 Unit 750.2C

Unit Description	Pond sludge storage tanks located in Tent 6 on the 750 Pad
Specific Tanks	Tanks D 1 through D 30 D33 through D-40
Tank Type	Double walled (Polyethylene)
Function	Storage
Design Capacity	11 150 gallons
Operating Capacity	10 000 gallons
Dimensions	13 feet 3 inches OD x 12 feet high
EPA Waste Codes	D006 D007 F001 F002 F005 F006 F007 F009
Waste Types	Mixed
Secondary Containment	
Type	Secondary Tank
Minimum Height	11 0 feet
Emptying	Manual
Leak Detection	Moisture sensor at the bottom of the annulus
Inspection Method	Visual/electronic sensor
Overfill Prevention	Level indicator
P&ID Drawing Number	39650 804
Special Unit Conditions	None

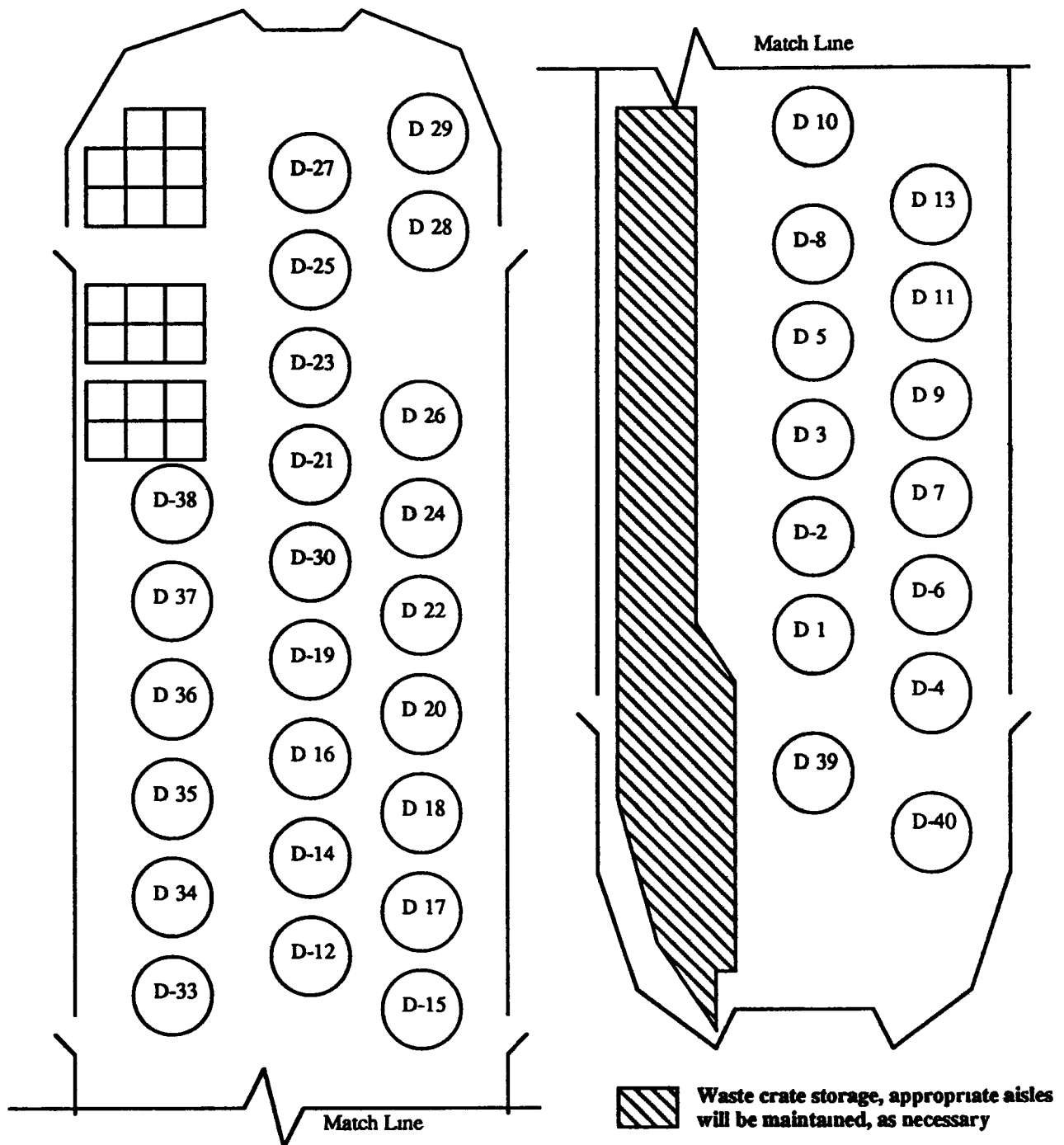
February 6 1997

IV 11

217

FIGURE IV 3

**RCRA TANK STORAGE UNIT 750 2C
TENT 6, 750 PAD**



NOTES

- 1) Drawing is not to scale and may not depict the actual location of the tanks within the unit
- 2) Each tank is a double walled tank

TANK UNIT INFORMATION SHEET

4 Unit 774.2

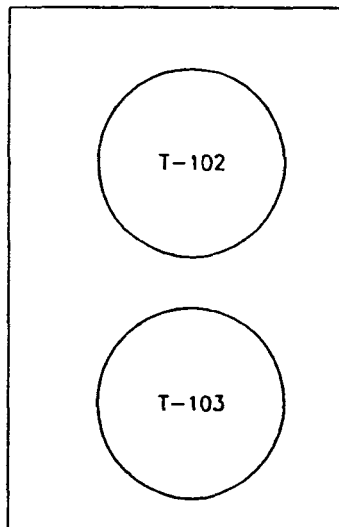
Unit Description	Liquid waste storage prior to transfer or shipment
Specific Tanks	Tanks T 102 and T 103 in Room 220 of Building 774
Tank Type	Standard
Function	Storage
Design Capacity	10 470 gallons
Operating Capacity	10 470 gallons
Dimensions	22 3 feet H x 9 0 feet D
EPA Waste Codes	D001 D002 D004 D008 D018 D019 D028 D029 D035 D038 D040 D043 F001 F003 F009
Waste Types	Mixed
Secondary Containment	
Type	Coated concrete
Minimum Height	2 9 feet
Emptying	Drain
Leak Detection	Visual
Inspection Method	Visual
Overfill Prevention	High level alarm
P&ID Drawing Number	39650 2070

Special Unit Conditions

- 1) This unit will have a staging area located in Room 220 for drums or other containers whose contents are to be transferred into these tanks. The size of the area will be dependent on the secondary containment provided for the staged containers.

February 6, 1997

NOTES



SECONDARY CONTAINMENT CALCULATIONS

- 1) VOLUME OF LARGEST TANK (Vt) 10 470 gal
- 2) FLOOR AREA (Af) 495 ft²
- 3) AREA OF OBSTRUCTIONS (Ao) 0 ft²
- 4) NET AREA (A) (An)=(Af)-(Ao) 495 ft²
- 5) MINIMUM BERM (Hb)
(Hb)=(Vt)/((An) 7.48 gal / ft) 2.9 ft

KEYWORDS		ORIGINAL ISSUE		XX/XX/93	SLA	SR	PR	SR			
1. RCRA	DATE	DESCRIPTION		DATE	APP	DOE	CLASS	JOB NO.			
2. MIXED	X	DESIGNED	ALMQUIST	XX/XX/93	U.S. DEPARTMENT OF ENERGY ROCKY FLATS AREA OFFICE ROCKY FLATS PLAN GOLDEN, COLORADO 80401 MIXED LL/TRU RCRA PERMIT MODIFICATION ROOM 220						
3. LOW LEVEL		DRAWN	LEWIS	XX/XX/93							
4. TRU		CHECKED	MAZURK	XX/XX/93							
5. SCHED CONTAIN		APPROVED	HUGHES	XX/XX/93							
6. BUC. FACILITY											
7. ROOM/AREA											
8. ROOM/AREA											
9. ROOM/AREA											
10. ROOM/AREA											
11. MASTER	SCALE	NONE		XX/XX/93	SIZE	DRAWING NUMBER		39650-2350	A	SHEET	
12. YES <input type="checkbox"/> NO <input type="checkbox"/>											

COMPUTER-GENERATED NO HAND-MADE CHANGES PERMITTED

D AQUEOUS WASTE COLLECTION SYSTEM FOR TREATMENT

Aqueous waste collection and treatment at the Site is accomplished through a three part system. The system consists of aqueous waste collection tanks within buildings, a waste transfer system and treatment processes for the aqueous waste. The collection tanks, the transfer system and part of the treatment process are considered a tank system as defined in 6 CCR 1007.3. Tank information sheets are located at the end of this section since the tanks function as a part of the treatment processes to which they transfer waste. Those parts of the treatment system that are not regulated as a tank system are subject to regulation as miscellaneous treatment units. Specific information regarding the regulatory status of individual portions of the aqueous waste collection and treatment system are contained in the unit information sheets at the end of this section.

1 Collection Tanks

Tanks are used at the Site for the collection of aqueous wastes generated as a result of building support and operations activities. In some cases, tanks are used for the collection of aqueous waste from several buildings, although in most cases, collection tanks are used for a single building's waste generation. Waste streams input into the collection tanks have varied a great deal over the last ten years. Initially, waste streams included aqueous wastes from multiple processing operations, laboratory operations, and building support activities (i.e., HVAC generated wastes, process cooling water, and footing drain liquids). Due to the change in the mission for the Site, the generation of aqueous wastes from production processes has been discontinued, but the need for the collection of other aqueous wastes still exists.

The following is a listing of the tanks used for the collection and accumulation of aqueous process wastes at the Site. For purposes of simplicity, all information sheets for the collection tanks used for the storage of aqueous process wastes are included in this section.

There are four tanks used for the collection of aqueous process waste in Building 776: T 1A (RCRA Unit 776 2A), T 1B (776 2B), T 2A (776 2C), and T 2B (776 2D). These tanks receive waste from Buildings 776, 777, and 779.

Aqueous process wastes generated in Building 881 are collected in a series of tanks in Building 887, including T 183 (RCRA Unit 887 2A), T 184 (887 2B), T 185 (887 2C), T 802A (887 2D), T 802B (887 2E), T 802C (887 2F), and T 802D (887 2G). These tanks are located in a below grade concrete enclosure and are connected to each other in series.

Additional information on all of the identified tanks is provided in the tank information sheets that follow.

2 Aqueous Waste Transfer System

Aqueous wastes collected in the tanks identified above are transferred to Building 374 for treatment through the Aqueous Waste Transfer System. This system includes four separate double-walled transfer lines that connect the tanks to Building 374. Each transfer line is made of an outer casing pipe and an inner transfer line. The space between the two pipes serves as secondary containment for the primary transfer lines. Included in the Aqueous Waste Transfer System are 20 valve vaults. These valve vaults are below grade concrete pits equipped with 1/4 inch polyethylene liners and groundwater collection sumps between the liner and the concrete floor to provide secondary containment. Collection bottles are located at the low end of each section of casing pipe within the valve vaults to collect any leakage that occurs. Each of the valve vaults are equipped with automatic leak detection.

systems that will alarm in the Building 374 control room if leakage is detected

The Aqueous Waste Transfer System is a part of the tank system associated with the collection tanks identified previously and the treatment system that is discussed in the next section. Since no collection or storage of waste occurs in the waste transfer system it is considered ancillary piping. The Aqueous Waste Transfer System is compliant with the applicable regulations and is inspected on a daily basis.

February 6 1997

IV 15

222

Page IV-16 is reserved

TANK UNIT INFORMATION SHEET

a Unit 776.2

Unit Description	Aqueous process waste collection and storage
Specific Tanks	Tanks T 1A (Unit 776 2A) T 1B (Unit 776 2B) T 2A (Unit 776 2C) and T 2B (776 2D)
Tank Type	Standard
Function	Storage
Design Capacity	T 1A and T 1B 1 300 gallons (each) T 2A and T 2B 1 630 gallons (each)
Operating Capacity	T 1A and T 1B 1 200 gallons (each) T 2A and T 2B 1 500 gallons (each)
Dimensions	T 1A and T 1B inches OD x inches long T 2A and T 2B 122 inches OD x 64 inches long
EPA Waste Codes	D001 D002 D004 D011 D018 D019 D028 D029 D035 D038 D040 D043 F001 F003 F005 F007 F009
Waste Types	Hazardous Mixed
Secondary Containment	
Type	Bermed area with Hypalon liner
Minimum Height	feet
Emptying	Manual
Leak Detection	Visual
Inspection Method	Visual
Overfill Prevention	Bypass to empty tank
P&ID Drawing Number	39094 219 M 51260 004
Special Unit Conditions	None

February 6 1997

IV 17

224



COMPUTER GENERATED NO MANUAL CHANGES ALL

IV-17a

205

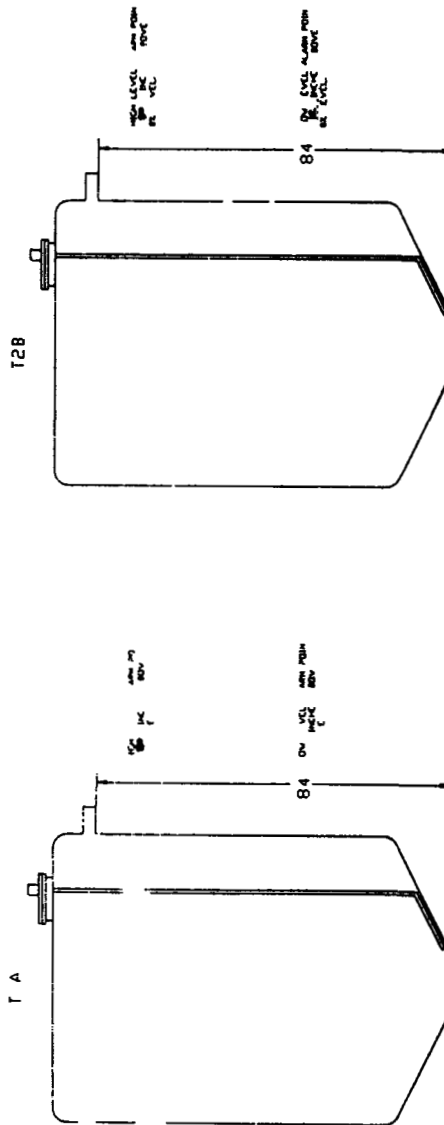
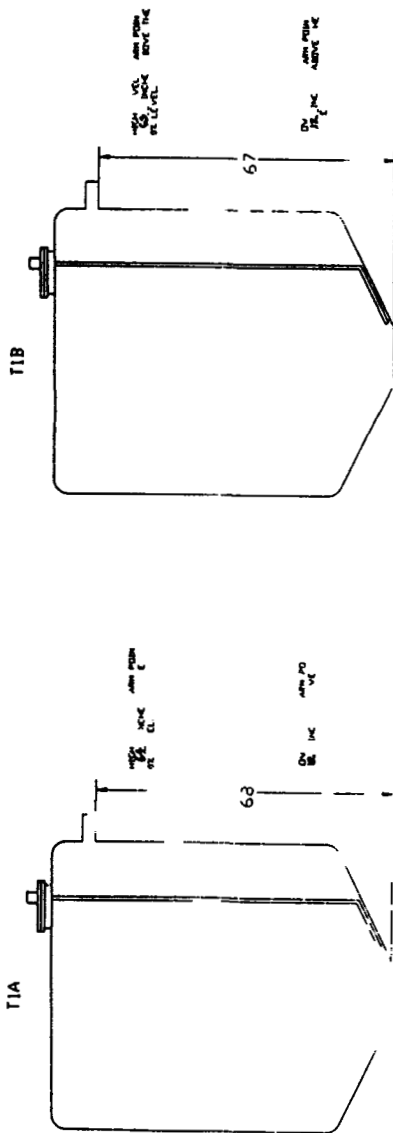
NATURAL GAS	CONSTRUCTION WELL FROM	OOR AND SEAL	AMTD	EPOE	AM

MASTER DRAWING	MAIN AIR AS-BUILT PER DEL GROUP RESPONSIBLE <i>W/</i>
----------------	--

VERBODEN

[illegible]

FIGURE D-420



INFORMATION ONLY,

REVISIONS	DATE	BY	DESCRIPTION
1	10/1/76	W. J. H.	REVISION
2	10/1/76	W. J. H.	REVISION
3	10/1/76	W. J. H.	REVISION
4	10/1/76	W. J. H.	REVISION
5	10/1/76	W. J. H.	REVISION
6	10/1/76	W. J. H.	REVISION
7	10/1/76	W. J. H.	REVISION
8	10/1/76	W. J. H.	REVISION
9	10/1/76	W. J. H.	REVISION
10	10/1/76	W. J. H.	REVISION
11	10/1/76	W. J. H.	REVISION
12	10/1/76	W. J. H.	REVISION
13	10/1/76	W. J. H.	REVISION
14	10/1/76	W. J. H.	REVISION
15	10/1/76	W. J. H.	REVISION
16	10/1/76	W. J. H.	REVISION
17	10/1/76	W. J. H.	REVISION
18	10/1/76	W. J. H.	REVISION
19	10/1/76	W. J. H.	REVISION
20	10/1/76	W. J. H.	REVISION
21	10/1/76	W. J. H.	REVISION
22	10/1/76	W. J. H.	REVISION
23	10/1/76	W. J. H.	REVISION
24	10/1/76	W. J. H.	REVISION
25	10/1/76	W. J. H.	REVISION
26	10/1/76	W. J. H.	REVISION
27	10/1/76	W. J. H.	REVISION
28	10/1/76	W. J. H.	REVISION
29	10/1/76	W. J. H.	REVISION
30	10/1/76	W. J. H.	REVISION
31	10/1/76	W. J. H.	REVISION
32	10/1/76	W. J. H.	REVISION
33	10/1/76	W. J. H.	REVISION
34	10/1/76	W. J. H.	REVISION
35	10/1/76	W. J. H.	REVISION
36	10/1/76	W. J. H.	REVISION
37	10/1/76	W. J. H.	REVISION
38	10/1/76	W. J. H.	REVISION
39	10/1/76	W. J. H.	REVISION
40	10/1/76	W. J. H.	REVISION
41	10/1/76	W. J. H.	REVISION
42	10/1/76	W. J. H.	REVISION
43	10/1/76	W. J. H.	REVISION
44	10/1/76	W. J. H.	REVISION
45	10/1/76	W. J. H.	REVISION
46	10/1/76	W. J. H.	REVISION
47	10/1/76	W. J. H.	REVISION
48	10/1/76	W. J. H.	REVISION
49	10/1/76	W. J. H.	REVISION
50	10/1/76	W. J. H.	REVISION
51	10/1/76	W. J. H.	REVISION
52	10/1/76	W. J. H.	REVISION
53	10/1/76	W. J. H.	REVISION
54	10/1/76	W. J. H.	REVISION
55	10/1/76	W. J. H.	REVISION
56	10/1/76	W. J. H.	REVISION
57	10/1/76	W. J. H.	REVISION
58	10/1/76	W. J. H.	REVISION
59	10/1/76	W. J. H.	REVISION
60	10/1/76	W. J. H.	REVISION
61	10/1/76	W. J. H.	REVISION
62	10/1/76	W. J. H.	REVISION
63	10/1/76	W. J. H.	REVISION
64	10/1/76	W. J. H.	REVISION
65	10/1/76	W. J. H.	REVISION
66	10/1/76	W. J. H.	REVISION
67	10/1/76	W. J. H.	REVISION
68	10/1/76	W. J. H.	REVISION
69	10/1/76	W. J. H.	REVISION
70	10/1/76	W. J. H.	REVISION
71	10/1/76	W. J. H.	REVISION
72	10/1/76	W. J. H.	REVISION
73	10/1/76	W. J. H.	REVISION
74	10/1/76	W. J. H.	REVISION
75	10/1/76	W. J. H.	REVISION
76	10/1/76	W. J. H.	REVISION
77	10/1/76	W. J. H.	REVISION
78	10/1/76	W. J. H.	REVISION
79	10/1/76	W. J. H.	REVISION
80	10/1/76	W. J. H.	REVISION
81	10/1/76	W. J. H.	REVISION
82	10/1/76	W. J. H.	REVISION
83	10/1/76	W. J. H.	REVISION
84	10/1/76	W. J. H.	REVISION
85	10/1/76	W. J. H.	REVISION
86	10/1/76	W. J. H.	REVISION
87	10/1/76	W. J. H.	REVISION
88	10/1/76	W. J. H.	REVISION
89	10/1/76	W. J. H.	REVISION
90	10/1/76	W. J. H.	REVISION
91	10/1/76	W. J. H.	REVISION
92	10/1/76	W. J. H.	REVISION
93	10/1/76	W. J. H.	REVISION
94	10/1/76	W. J. H.	REVISION
95	10/1/76	W. J. H.	REVISION
96	10/1/76	W. J. H.	REVISION
97	10/1/76	W. J. H.	REVISION
98	10/1/76	W. J. H.	REVISION
99	10/1/76	W. J. H.	REVISION
100	10/1/76	W. J. H.	REVISION

IV-17b

226

TANK UNIT INFORMATION SHEET

b Unit 887.2

Unit Description	Aqueous process waste collection and storage
Specific Tanks	Tanks T 183 (Unit 887 2A) T 184 (Unit 887 2B) T 185 (Unit 887 2C) T 802A (Unit 887 2D) T 802B (Unit 887.2E) T 802C (Unit 887 2F) T 802D (Unit 887 2G)
Tank Type	Standard
Function	Storage
Design Capacity	3 000 gallons (each)
Operating Capacity	2 700 gallons (each)
Dimensions	96 inches OD x 68 inches long
EPA Waste Codes	D001 D002 D004 D011 D018 D019 D028 D029 D035 D038 D040 D043 F001 F003 F005 F007 F009
Waste Types	Hazardous Mixed
Secondary Containment	
Type	Coated concrete vault
Minimum Height	N/A
Emptying	Manual
Leak Detection	Visual
Inspection Method	Visual
Overfill Prevention	level sensor on last tank tanks are hooked in series
P&ID Drawing Number	37810-454 to 460 SP
Special Unit Conditions	None

February 6, 1997

IV 18

227

PLANT ROCKY FLATS, COLORADO				FILE/JOB NO.	
LOCATION		BLDG NO 887		CHARGE NO.	
MANUFACTURER		NO. UNITS T 183		B/M NO.	
YEAR OF CONSTRUCTION UNKNOWN > 15 YRS				P. O. NO.	
FIELD ERECTED		YES NO		TOTAL VOLUME 3000 GAL	
NO UNITS					

DESIGN DATA	1	Operating Pressure	psig	ATM
	2	Operating Temperature	F	AMB
	3	Liquid Specific Gravity		1.2
	4	Containment	Yes (No)	
	5	Design Pressure	psig	
	6	Design Temperature	F	
	7	TYPE LIQUID	LAB WASTE & WATER	
	8			
	9	Hydrostatic Test	psig	
	10	Shell Head Conc. Allow.	in.	
	11	Shell Head Joint EFL	%	
	12	Codes	Stamp	Yes (No)
	13	Relief	Stress Relieved	
	14	Material Board No.		
	15	Type Support	LEG (PIPE) AS SHOWN	
MATERIALS	16	Material		
	17	Flare		
	18	Welding		
	19	Welding		
	20	Welding		
	21	Welding		
	22	Welding		
	23	Welding		
	24	Welding		
	25	Welding		
	26	Welding		
	27	Welding		
	28	Welding		
	29	Welding		
	NOZZLE SCHEDULE	30	Welding	
31		Welding		
32		Welding		
33		Welding		
34		Welding		
35		Welding		
36		Welding		
37		Welding		
38		Welding		
39		Welding		
40		Welding		
41		Welding		
42		Welding		
43		Welding		

NO.	Size	Rating	Face	Type
1	18"	150#	RF	FLG
2	4"			
3	4"			
4	4"			
5	4"			
6	4"			
7	4"			
8	4"			

CONTROLLED DRAWING

RELEASED & REBUILT PER P.E. & PROD. DES - 13

APPROVED BY *[Signature]* DATE 12-5-86

CONFIGURATION CONTROL CONTROL

CONTROL NO. **PLC-0040**

SPEC. BY **K.H.**

CHECKED *[Signature]*

APP'D *[Signature]*

DATE **11-28-86**

ROCKWELL INTERNATIONAL

SERVICE **BLDG 887**

PROCESS WASTE TANK

RCRA UNIT #40

FIG D 434

T 183

REVISION	DATE	BY	DESCRIPTION
A	1-28-87	B	
C			

DOOR O O M E E L O M O N M A K D

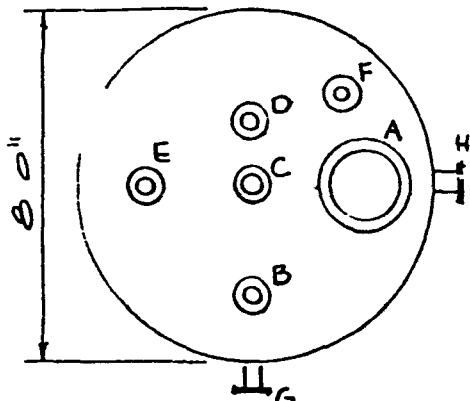
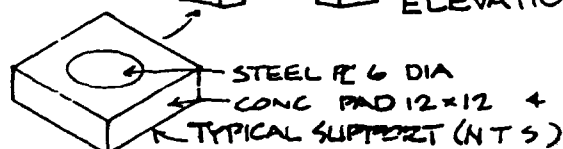
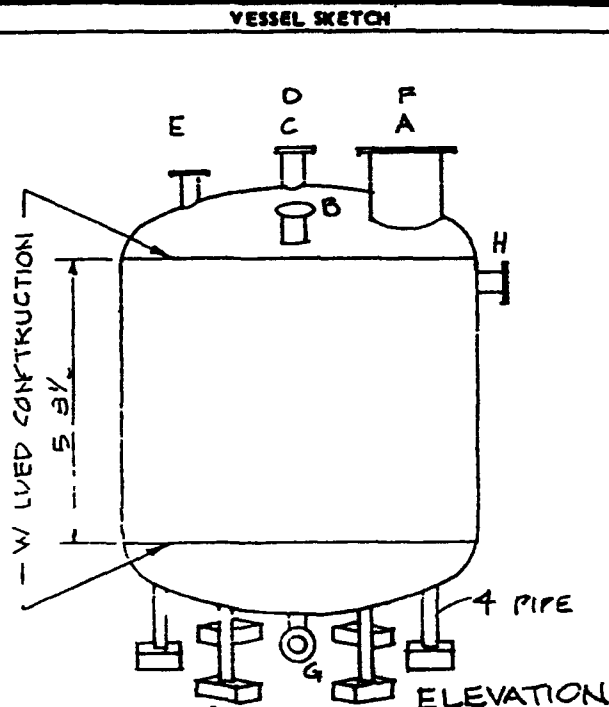
SHEET OF

SPEC. NO. **37810-454**

6-81

IV-18a

CONTROLLED DRAWING



T 183 PLAN

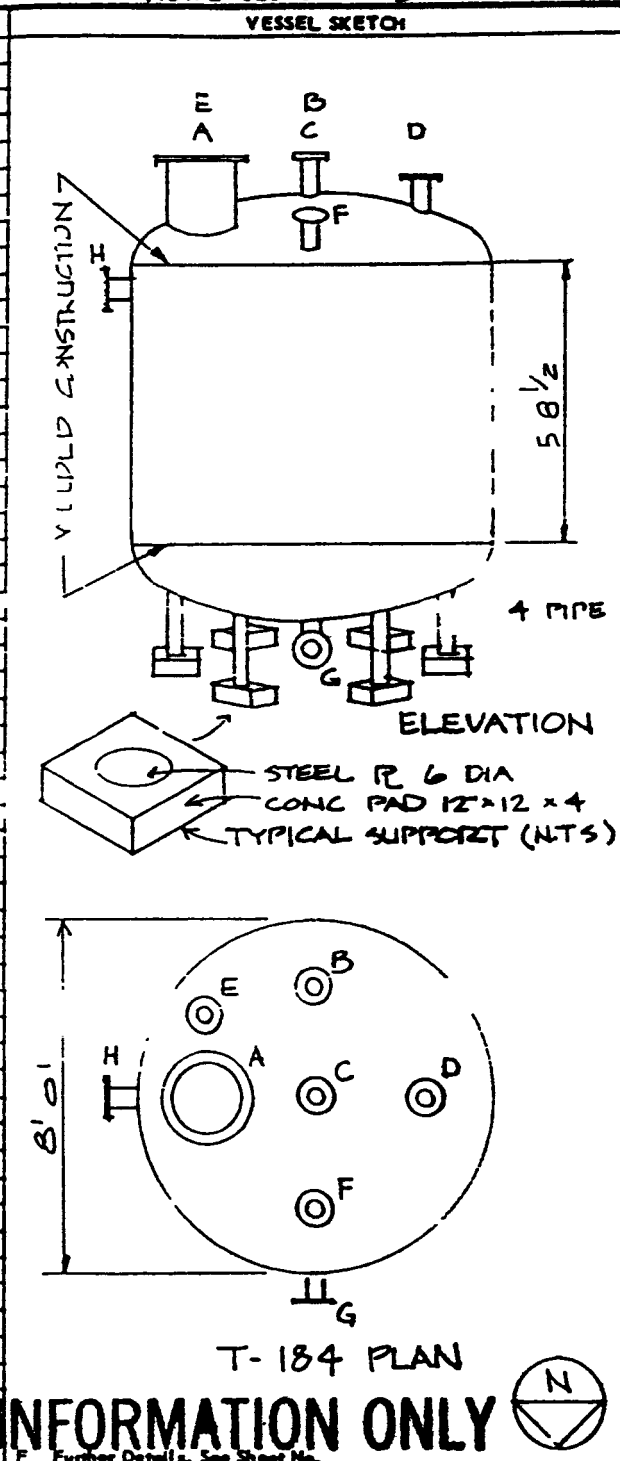
INFORMATION ONLY

C.A.S.
REV. U
2/4/87

228

PLANT	ROCKY FLATS, COLORADO		FILE/JOB NO.	419601
LOCATION	BLDG. NO.	887	CHARGE NO.	
MANUFACTURER	NO. UNITS	T 184	B/M NO.	
YEAR OF CONSTRUCTION UNKNOWN > 15 YRS			P.O. NO.	
FIELD ERECTED	YES	NO	TOTAL VOLUME	3000 GAL

DESIGN DATA	1	Operating Pressure	psig	ATM	
	2	Operating Temperature	F	AMB	
	3	Liquid Specific Gravity		1.0 ±	
	4	Contents L. shd	Y	(No)	
	5	Design Pressure	psig		
	6	Design Temperature	F		
	7	TYPE LIQUID	PROCESS WASTE		
	8				
	9	Hydrostatic T	psig		
	10	Shell Head Corr Allow.	"		
MATERIALS	11	Shell Head Jct. Eff.	%		
	12	Codes	Stamp	Yes (No)	
	13	Rel. graph.	Stress Reliever		
	14	National Bear. No.			
	15	Type Supports	EG (PIPE) AS SHOWN		
	16	Insulation			
	17	Fireproofing			
	18	Sandbl.	Pol. r		
	19	Material	1" gal	Drawn	Other
	20	Material Cl.	Ladder Cl.	Insul. R. gas	
NOZZLE SCHEDULE	21	Supports			
	22	Wind Load	Seismic		
	23	Wt. Empty	lb	W. F. ll of Water	
	24	Item	Thickness	Mat'l. Class	
	25	Shell		STAINLESS STEEL	
	26	Heads	in.		
	27	Lining	"		
	28		"		
	29		"		
	30	No. of Noz.			
NOZZLE SCHEDULE	31	Flanges			
	32	Coupling			
	33	M.H. Cover			
	34	Supports			
	35	Bol. w/ Stud			
	36	Weld		ST 316	
	37	Gaskets			
	38	Source	Mat'l.	No.	
	39	MANHOLE		1	
	40	LEVEL PROBE	B	1	
41	VENT	C	1		
42	HIGH LEVEL	D	1		
43	INLET	E	1		
44	RECYCLE	F	1		
45	DRAIN	G	1		
46	OVERFLOW	H	1		
47					
48					
49					
50					
51					
52					
53					
54					
55					

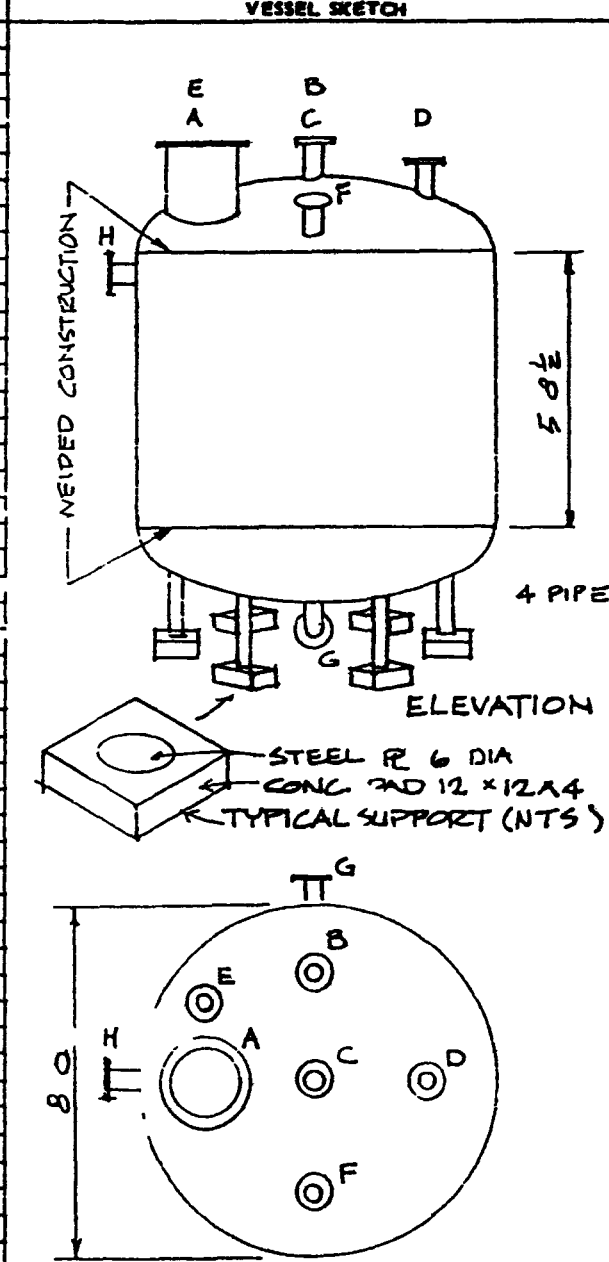


SPEC. BY	KH	ROCKWELL INTERNATIONAL	EQUIP. NO.	T 184
CHECKED	P. Jenkins	SERVICE BLDG 887	FIG. D 435	
APP'D	P. Jenkins	PROCESS WASTE 1 AN 6	VERTICAL VESSEL SPECIFICATIONS	
DATE	1-28-86	REVISION DATE	A	1-28-87
ENDOR	O. OM. L.	L. N. OR. M. OM. R. ED.	SH. E.	OF
SPEC. NO. 37810 455			M	

IV-18b

CONTROLLED DRAWING

PLANT ROCKY FLATS, COLORADO				FILE/JOB NO. 470601	
LOCATION BLDG. NO 887				CHARGE NO.	
MANUFACTURER NO. UNITS T 185				B/M NO.	
YEAR OF CONSTRUCTION UNKNOWN > 15 YRS				P O NO.	
FIELD ERECTED YES		NO		TOTAL VOLUME 3000 GAL	
		NO UNITS			

DESIGN DATA	1	Operating Pressure	psig	ATM.	VESSEL SKETCH 			
	2	Operating Temperature	F	AMB.				
	3	Liquid Spec II Gravity		1.1				
	4	Contents Lethal		Y (No)				
	5	Design Pressure	psig					
	6	Design Temperature	F					
	7	TYPE LIQUIDS		PROCESS WASTE				
	8							
	9	Hydrostat T	psig					
	10	Shell Heads Conc. Allow.	in.					
MATERIALS	11	Shell Heads Joint ER	%		NOZZLE SCHEDULE			
	12	Codes		Stamp Yes (No)				
	13	Radiographic		See Relaves				
	14	National Board No.						
	15	Typ Supports		PIPE AS SHOWN				
	16	I isolation						
	17	F reworking						
	18	Smelting		Paints				
	19	Manhole	Hi god	Devoted		Other	FLANGED	
	20	PT/Carbon Clap ac	Ladder Cl ac	I out Rl ac				
21	Supports				NOZZLE SCHEDULE			
22	Wind Load		See notes					
23	W Empty		W F 'I of Water	b				
24	Item	Thickness	Mat'l Class	Mat'l Minimum Quality				
25	Shell	n.		STAINLESS STEEL				
26	Heads	n.						
27	Lining	in.						
28		n.						
29		n.						
30	No. of Muds							
31	Flanges				NOZZLE SCHEDULE			
32	Coupling							
33	M.H. Cover							
34	Supports							
35	Bolts/Shds							
36	Notes							
37	Gaskets							
38	Service	Mark	No.	SI		Rating	Face	Type
39	MANHOLE		1	18		150#	RF	FLG
40	LEVEL NO	B	1	4				
41	VENT	C	1	4				
42	HIGH LEVEL	D	1	4				
43	INLET	E	1	4				
44	RECYCLE	F	1	4				
45	DRAIN	G	1	4				
46	OVERFLOW	H	1	4				
47								
48	CONTROLLED DRAWING							
49	RELEASED & REVIEWED PER E.I. PROD. FEB. 82							
50	APPROVED BY <i>[Signature]</i> DATE 12-5-86							
51	CONFIGURATION CONTROL CHORD							
52	CONTROL NO. <i>PW-0040</i>							
53	No. of to be Plugged or E. added							
54								
55								

SPEC. BY KH	ROCKWELL INTERNATIONAL	FIG. D-436	EQUIP. NO. T 185
CHECKED: <i>[Signature]</i>	SERVICE BLDG 887	VERTICAL VESSEL SPECIFICATIONS	
APP'D: <i>[Signature]</i>	PROCESS WASTE TANK		
DATE 1-28-86	REVISION DATE A 1-28-87	SPEC. NO. 37810-456	
NOOR O ON LE E L N ORM NM			

CLASS. REVIEW
2/1/87

230

6-81

IV-18c

CONTROLLED DRAWING

PLANT ROCKY FLATS, COLORADO						FILE/JOB NO. 478601	
LOCATION BLOG NO 887						CHARGE NO.	
MANUFACTURER COLONIAL IRON WORKS NO. UNITS T 802 A						B/M NO.	
CLEVELAND, OHIO YEAR OF CONSTRUCTION UNKNOWN						P. O. NO.	
FIELD RECTED		YES	NO	NO UNITS	(>15 YES)	TOTAL VOLUME	3000 GAL

DESIGN DATA	1	Operating Pressure	psig	ATM				
	2	Operating Temperature	F	AMB				
	3	Liquid Specific Gravity		1.2				
	4	Corrosive Liquid		Y (NO)				
	5	Design Pressure	psig					
	6	Design Temperature	F					
	7	TYPE LIQUID		LAB WASTE/WATER				
	8							
	9	Hydrostatic Test	psig					
	10	Shell Head Corr All w.	in.					
	11	Shell Head Jct ER	%					
	12	Code		Samp Yes (NO)				
	13	Relief graph		Stress Relieved				
	14	National Board No.						
	15	Type Support		33 (PIPE) AS SHOWN				
MATERIALS	16	Insulation						
	17	Frappose						
	18	Schedule		Pair				
	19	Material	(4 gal)	D in. or Other = 100				
	20	Platform C		Ladder C				
	21	Pipe Support						
	22	Wind Load		30 ft/sec				
	23	Wt. Empty	lb	11 ft/sec				
	24	Shell		STAINLESS STEEL				
	25	Heads	in.					
	26	Lining	in.					
	27							
	28							
	29							
	NOZZLE SCHEDULE	30	Nozzle Mark					
31		Flange						
32		Coupling						
33		M.H. Cover						
34		Supports						
35		Bolts/Studs						
36		Nuts		STL				
37		Gaskets						
38		Item	Mark	No	SI	Rating	Fac	Type
39		MANHOLE		1	18"	150#	RF	FLG
40		RECYCLE	B	1	4			
41		VENT	C	1	4			
42		HIGH LEVEL	D	1	4			
43		LEVEL NO	E	1	4			
44		INLET	F	1	4			
45	DRAIN LINE	G	1	4				
46	OVERFL	H	1	4				
47								
48								
49								
50								
51								
52								
53								
54								
55								

CONTROLLED DRAWING

RELEASED & REVERSE PER FE 1 - PROG. DEC 13

APPROVED *[Signature]* DATE **12-5-86**

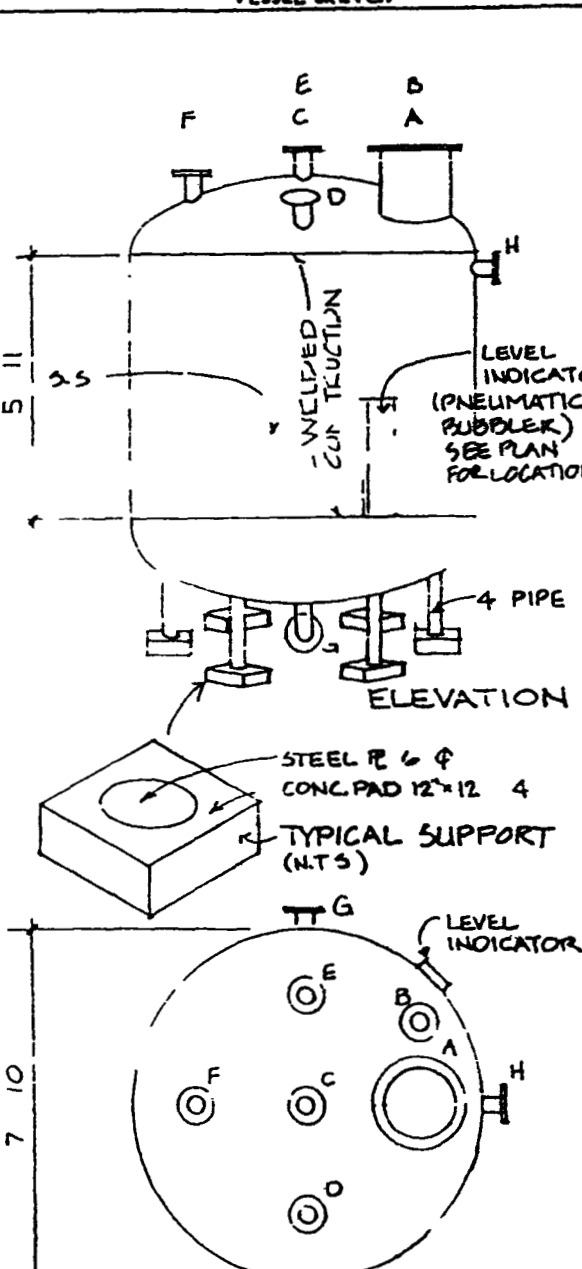
ENGINEERING CONTROL GROUP

CONTROL NO. **PWG 0010**

T 802 A PLAN

INFORMATION ONLY

N



ELEVATION

PLAN

SPEC. BY KH	ROCKWELL INTERNATIONAL	FIG. D-437	EQUIP NO T-802A
CHECKED: <i>[Signature]</i>	SERVICE 3LXG 887	VERTICAL VESSEL SPECIFICATIONS	
PP'D: <i>[Signature]</i>	PROCESS WASTE TANK		
DATE 1-28-86	REVISION DATE A 1-28-87	SPEC. NO. 37810-457	
NDD O OM E OM OM RED			

CLA
2/1/87

231

PLANT ROCKY FLATS COLORADO				FILE/JOB NO. 470601	
LOCATION		BLDG NO. BB7		CHARGE NO.	
MANUFACTURER COLONIAL IRON WORKS		NO. UNITS T 802 B		B/M NO.	
CLEVELAND, OHIO		YEAR OF CONSTRUCTION UNKNOWN		P. Q. NO.	
FIELD ERECTED		YES <input type="checkbox"/> NO <input type="checkbox"/>		NO UNITS (>15 YRS)	
		TOTAL VOLUME 3000		GAL	

DESIGN DATA	1	Operating Pressure	psig	ATM	<p style="text-align: center;">VESSEL SKETCH</p>
	2	Operating Temperature		AMB	
	3	Liquid Specific Gravity		1.0	
	4	Co. on L. thd.		Y (NO)	
	5	Design Pressure	psig		
	6	Design Temperature	F		
	7	TYPE LIQUID		LAB WASTE/WATER	
	8				
	9	Hydro test	psig		
	10	Shell Head Corr Allow.	in.		
	11	Sh. H. Head Jct. CR	%		
	12	Codes		Samp Yes (NO)	
	13	R. d. graph		Stress Reliever	
	14	National Board No.			
	15	Typ. Support		E-3 (PIPE) AS SHOWN	
MATERIALS	16	Insulation			
	17	Insulation			
	18	Insulation			
	19	Manhole		M. good D. in. 18 Other F. 24 INCHES	
	20	Insulation			
	21	Insulation			
	22	Insulation			
	23	Empty	lb	W. F. H. of W. lb	
	24				
	25	all		STAINLESS STEEL	
	26	Head			
	27	L. S.			
	28				
	29				
	NOZZLE SCHEDULE	30	1. Mode		
31		ong			
32		Comp. y			
33		M. H. Co. or			
34		Supports			
35		Bot. / Stud			
36		G. sh			
37					
38		Serv.			
39		MANHOLE			
40		RECYCLE			
41		VEN			
42		HIGH LEVEL			
43		LEVEL IND			
44		INLET			
45	DRAIN LINE				
46	OVERFLOW				
47					
48					
49					
50					
51					
52					
53					
54					
55					

SPEC. BY KH		ROCKWELL INTERNATIONAL		FIG. D-438		EQUIP. NO. T 802 B	
CHECKED P. Edwards		SERVICE BLDG BB7				VERTICAL VESSEL SPECIFICATIONS	
APP'D R. Jenkins		PROCESS WASTE TANK					
DATE 1-28-86		REVISION DATE A 1-28-87				SPEC. NO. 37810-458	
N O OMP		L NFO M ON M R O					

**T 802 B PLAN
INFORMATION ONLY**



PLANT ROCKY FLATS, COLORADO		FILE/JOB NO. 47060
LOCATION		BLDG NO 887
MANUFACTURER COLONIAL IRON WORKS		CHARGE NO.
CLEVELAND OH O YEAR OF CONSTRUCTION UNKNOWN		B/M NO.
FIELD ERCTED YES NO		P. O. NO.
NO. UNITS (> 15 YRS.)		TOTAL VOLUME 3000 GAL

DESIGN DATA	1	Operating Pressure	psig	ATM				
	2	Operating Temperature	F	A/B				
	3	Liquid Specific Gravity						
	4	Content Liquid		Yes (No)				
	5	Design Pressure	psig					
	6	Design Temperature	F					
	7	TYPE LIQUID		PROCESS WASTE				
	8							
	9	Hydrostatic Test	psig					
	10	Shell Head Corr Allow.						
	11	Shell Head Jct Eff.	%					
	12	Code		Stress Relief Yes (No)				
	13	Radiograph						
	14	National Board No.						
	15	Type Support		AS SHOWN				
MATERIALS	16	Insulation						
	17	Finishing						
	18	Schedule		Paint				
	19	Material	Stainless Steel	Other AS SHOWN				
	20	Platform						
	21	Support						
	22	Weight						
	23	Weight Empty						
	24	Item	Thick	Material	Minimum Qty			
	25	Shell			STAINLESS STEEL			
	26	Head						
	27	Lining						
	28							
	29							
	NOZZLE SCHEDULE	30	Nozzle					
31		Flanges						
32		Coupling						
33		M.H. Cover						
34		Supports						
35		Ball Valve						
36		Nozzle						
37		Gaskets						
38		Service	Mark	No.	Size	Rating	Face	Type
39		MANHOLE		1	18	150#	RF	FG
40		INLET	B	1	4			
41		VENT	C	1	4			
42		HIGH LEVEL	D	1	4			
43		RECYCLE	E	1	4			
44		LEVEL IND	F	1	4			
45	DRAIN LINE	G	1	4				
46	OVERFLOW	H	1	4				
47								
48	CONTROLLED DRAWING							
49	RELEASED FOR SERVICE PER P.E. PROC. DEC. 28							
50	APPROVED BY <i>[Signature]</i> DATE 12-5-86							
51	CONFIGURATION CONTROL COORD							
52	CONTROL NO. PWC-0040							
53								
54								
55	V. J. to b. P. good B. ded							

FIG. D-439 T 802C

VERTICAL VESSEL SPECIFICATIONS

SPEC. NO. **37810 459**

ROCKWELL INTERNATIONAL

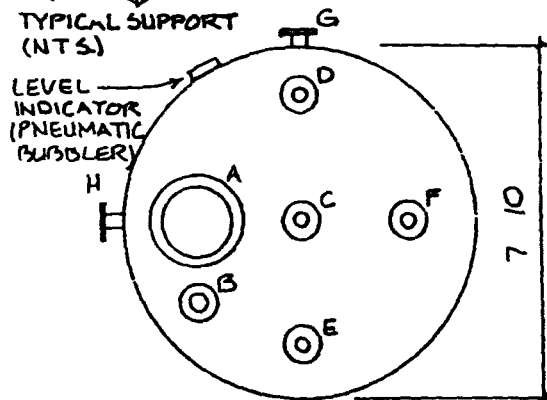
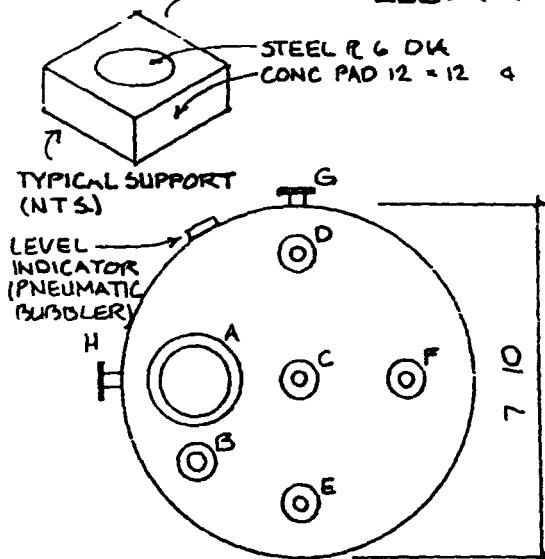
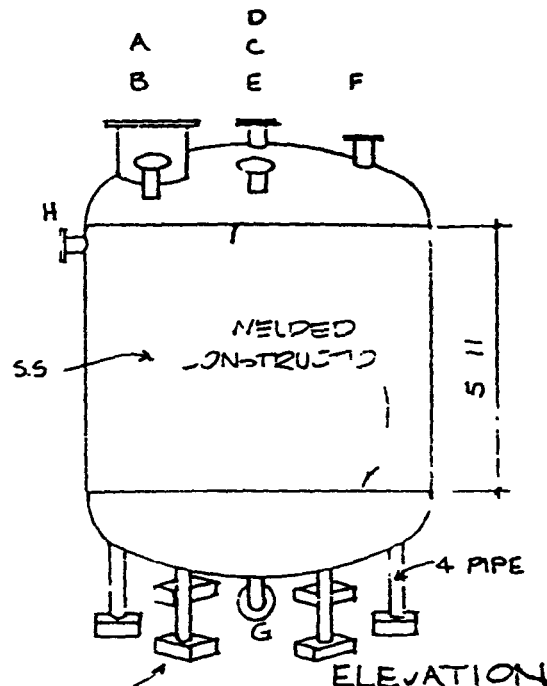
SERVICE **BLDG 887**

PROCESS WASTE TANK

RCRA UNIT #4C

DATE **11-28-86** REVISION DATE **A 1-28-87 B**

INFORMATION ONLY



T 802 C PLAN



C. 55
REV. 10
4/1/87

PLANT ROCKY FLATS, COLORADO						FILE/JOB NO. 430601	
LOCATION				BLDG. NO. 887		CHARGE NO.	
MANUFACTURER COLONIAL IRON WORKS				NO. UNITS T802 D		B/M NO.	
CLEVELAND OHIO				YEAR OF CONSTRUCTION UNKNOWN > 15 YRS.			
FIELD ERCTED YES NO				NO UNITS		TOTAL VOLUME 3000 GAL	

DESIGN DATA	1	Operating Pressure	psig	ATM				
	2	Operating Temperature	F	AMB				
	3	Liquid Specific Gravity		1.2				
	4	Content L. shd		Y (N)				
	5	Design re. sure	psig					
	6	Design Temperature	F					
	7	TYPE LIQUID	LAUNDRY WASTE					
	8							
	9	Hydrostat T	psig					
	10	Shell	Head	Corr. Allow. in.				
	11	Shell	Head	Joint EFF. %				
	12	Codes	Stamp Yes (N)					
	13	Rel. graph	Stress Reliever					
	14	National Board No.						
	15	Typ. Supports	LEG (COPE) AS SHOWN					
	16	Insulation						
	17	Fireproofing						
	18	Sandbl.	Pat. n.					
	19	Manhole	(H) 2nd	O. v. ed. Other FLANGED				
	20	Platform Cl. as	Ladder Clipse	I. v. Rings				
21	as Supports							
22	Wind L. ed.	Seismic						
23	Wt. Empty	lb	4 F. II of W. or lb					
MATERIALS	24	I =	Thickness	Min. P. Cl. or Min. Minimum Qual. by				
	25	Shell	n.	STAINLESS STEEL				
	26	Head	n.					
	27	Lining	n.					
	28		n.					
	29		n.					
	30	Manhole	Mod.					
	31	Flange						
	32	Clamping						
	33	M.H. Cover						
NOZZLE SCHEDULE	34	Supports						
	35	Butter/Stud						
	36	Welds						
	37	Gaskets						
	38	Service	Mark	No.	SI	Rating	Face	Typ
	39	MANHOLE	A	1	18	150#	RF	FLG
	40	INLET	B	1	4			
	41	VENT	C	1	4			
	42	HIGH LEVEL	D	1	4			
	43	RECYCLE	E	1	4			
44	LEVEL IND.	F	1	4				
45	DRAIN LINE	G	1	4				
46	OVERFLOW	H	1	4				
47								
48	CONTROLLED DRAWING							
49	RELEASED & REVISED PER FEEDBACK DEC-14							
50	APPROVED BY <i>[Signature]</i> DATE 12-5-86							
51	COORDINATION CONTROL COORD							
52	CONTROL NO. PNL-0040							
53	No. 1 to be Plugged or Filled							
54	F. Further Details, See Sheet No.							
55								

SPEC. BY KH

CHECKED *[Signature]*

APP'D. *[Signature]*

DATE 12-28-86

REVISION DATE 1-28-87

NOOR O OMP L N O R M O N M O

ROCKWELL INTERNATIONAL

SERVICE BLDG 887

PROCESS WASTE TANK

RCRA UNIT #40

FIG. D-440 T802 D

VERTICAL VESSEL SPECIFICATIONS

SPEC. NO. 37810-460

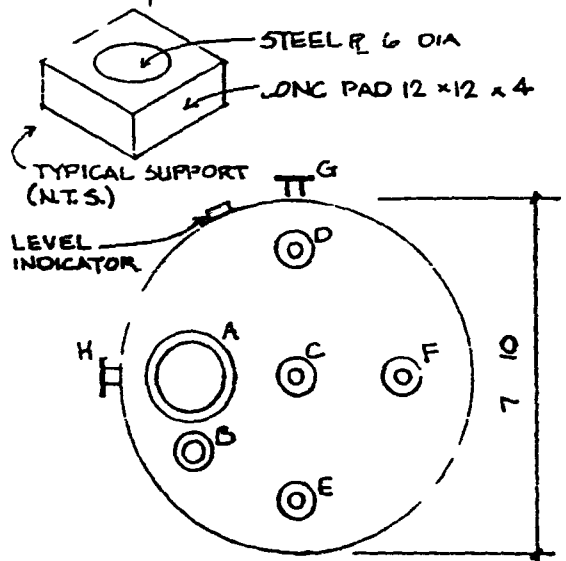
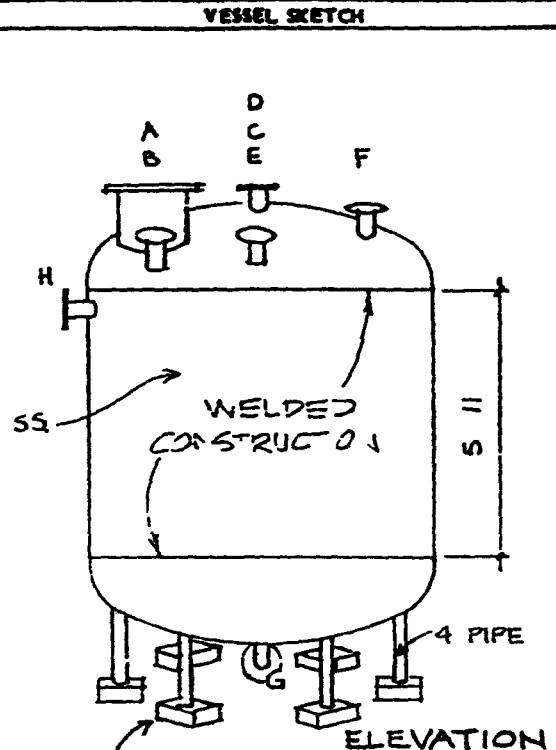
CL. 3

R. 2/4/87

234

CONTROLLED DRAWING

IV-18g



TYPICAL SUPPORT (N.T.S.)

T-802 D PLAN



PART V TREATMENT UNITS

TABLE OF CONTENTS

A INTRODUCTION	V 1
B TREATMENT UNITS STANDARD CONDITIONS	V 1
1 Types of Permitted Treatment Units	V 1
2 Containment and Detection of Releases	V 1
3 Compatibility of Treatment Process and Wastes	V 3
4 Use and Management of Containers	V 3
5 Spill and Overfill Prevention	V 3
6 Feed Mechanism	V-4
7 Process Control	V-4
8 Management of Ignitable or Reactive Wastes	V 5
9 Inspections	V 5
10 Staging Areas	V 5
11 Repair and Certification of Treatment Units	V 5
C TREATMENT UNITS UNIT SPECIFIC CONDITIONS	V-6
1 Unit 371 3	V-6
a Caustic Waste Treatment System	V-6
2 Unit 374 3	V 17
3 Unit 707 3	V 29
a Salt Stabilization	V 29
4 Unit 771 3	V 36
a Hydroxide Precipitation	V 36
b Oxalate Precipitation	V 37
5 Unit 774 3	V 41
a Miscellaneous Waste Handling and Solidification	V 41
b Aqueous Waste Treatment	V 41
6 Unit 776 3	V 45
a Advanced Size Reduction Facility	V 45
7 Unit 881 3	V 47
a Electrochemical Chlorination	V 47
b Bench Scale Hazardous Waste Chemical Treatment.	V-47

PART V TREATMENT UNITS

A INTRODUCTION

Part V of the permit establishes specific conditions for the treatment of RCRA regulated hazardous waste in treatment units at the Site. Section B of Part V contains standard conditions for treatment units while section C contains process specific information.

The standard conditions are a compilation of applicable regulatory requirements for waste management facilities identified in 6 CCR 1007.3 Part 264. This section of the permit contains all of the requirements for the operation of the treatment units identified in this permit. Each treatment unit in this permit is comprised of either a single hazardous waste treatment process or multiple treatment processes which are located within the same physical structure.

B TREATMENT UNITS STANDARD CONDITIONS

The following general conditions are applicable to all treatment units subject to this permit. All treatment units which include tank or container storage facilities must meet the applicable requirements found in Part IV B Tank Systems Standard Conditions and/or Part III B Container Storage Units Standard Conditions of this permit.

1 Types of Permitted Treatment Units

The Permittee may treat RCRA regulated hazardous waste in the following types of treatment processes. Specific treatment processes within each treatment unit are identified in Section C Treatment Units Unit Specific Conditions.

- a Chemical Treatment treatment processes in which a hazardous waste is chemically treated to result in a non hazardous or less hazardous waste.
- b Solidification and Stabilization treatment processes which employ additives to reduce the mobility of hazardous constituents.
- c Thermal Treatment treatment processes in which heat is used to treat hazardous waste by eliminating hazardous characteristics and/or calcining the residual waste material.
- d Size Reduction treatment process in which wastes are disassembled, crushed, or otherwise reduced in size for segregation or packaging purposes.

2 Containment and Detection of Releases

The Permittee will provide secondary containment for all treatment processes included in this permit.

- a Secondary containment for treatment processes will be provided by one or more of the following:
 - 1 Glovebox The treatment process will be contained within a glovebox which is capable of containing the entire volume of solution within the treatment process.

236

A criticality drain designed to prevent the accumulation of greater than one inch of liquid will be in place within the floor of the glovebox for criticality safety purposes

The glovebox will be maintained in good condition free of any defects that could impair its effectiveness as containment and allow the migration of contaminants to the environment

- 11 Coated Concrete The area under and around the treatment process will be surrounded by a berm or wall which meets the minimum berm height identified for the unit. The floor and berm or wall of a concrete secondary containment area will be maintained in good condition free of cracks and gaps that could impair its effectiveness as containment and allow the migration of contaminants to the environment. The concrete will be coated with epoxy or another coating which offers equivalent protection. The coating will cover the entire floor and berm or wall up to the minimum berm height. Berms or walls will completely surround the perimeter of the treatment area
- 111 Catch Basin Primary components of the treatment process will be located within the confines of a catch basin made of metal, plastic, HDPE, fiberglass, stainless steel, or other material compatible with the hazardous waste being treated. The catch basin must have the capacity to contain at least 100 percent of the quantity of hazardous or mixed waste being treated in the primary treatment process. The catch basin will be maintained in good condition free of cracks and gaps which could impair its effectiveness as containment and allow the migration of contaminants to the environment
- iv Stainless Steel The floor and berm of the area in which the treatment process is located are made of stainless steel which is maintained in good condition free of cracks and gaps that could impair its effectiveness as containment and allow the migration of contaminants to the environment. The area will be surrounded by a berm or wall that meets or exceeds the minimum berm height specified for the area or unit
- b All secondary containment structures will be capable of containing the contents of the largest treatment unit and 100% of the largest tank within the structure. Minimum required berm heights to contain the contents of the largest treatment unit in the structure are provided in the Treatment Unit Unit Specific Conditions if they are applicable
- c Ancillary equipment consisting of above ground piping with welded flanges, welded joints, or welded connections that are visually inspected for leaks each operating day do not require secondary containment. Welded flanges include flanges which are welded to the pipe but connected to the abutting flange with bolts. All other ancillary equipment will be provided with secondary containment
- d Releases into the secondary containment will be detected by visual inspections, liquid sensing instruments, or radiation monitoring instruments. Releases from treatment processes will be removed within 24 hours from detection or in as timely a manner as possible

231

3 Compatibility of Treatment Process and Wastes

The Permittee may introduce only those waste types identified for the respective treatment process in Part V Section C Treatment Unit Unit Specific Conditions. The Permittee will typically use stainless steel, glass or Kynar™ lined units for the treatment of corrosive wastes. Other materials which may be used must provide equivalent protection. The Permittee will not place any new waste type into a treatment unit unless

- a the compatibility of the new waste type with the prior contents of the treatment unit is determined by testing or documented by the Permittee or
- b the treatment unit is cleaned or flushed to the extent necessary to ensure compatibility with the new waste type

4 Use and Management of Containers

The Permittee will manage any containers used to hold a hazardous waste in the treatment process in the following manner:

- a The Permittee will verify that containers to be used to hold hazardous waste are in good condition prior to use
- b The Permittee will use only containers which are compatible with the hazardous waste to be contained
- c The Permittee will verify that containers remain closed unless adding or removing hazardous waste
- d The Permittee will verify that containers are handled and managed in a manner to minimize damage

5 Spill and Overfill Prevention

The Permittee will use appropriate controls and practices to prevent spills and overfills from treatment processes. These will include one or more of the following:

- a Spill prevention. The Permittee will use one or more of the following spill prevention controls or an equivalent:
 - i Containment. The containers are kept inside secondary containment as described above
 - ii Direct monitoring. The process is monitored continuously to prevent spills
 - iii Vacuum transfer. A vacuum is applied to the transfer line so that liquids are moved into the line and then into the destination treatment unit as a result of pressure differentials. The vacuum transfer method aids in preventing backflow and spillage of liquids
- b Overfill prevention. The Permittee will use one or more of the following overfill prevention controls or an equivalent:
 - i Direct monitoring. The transfer is monitored continuously to prevent overfill

238

- ii Automatic feed cutoff A device is used to stop the flow of hazardous waste into the treatment unit when it is filled to operating capacity or another predetermined level
- iii High level alarm A device is used to detect the level of hazardous waste in treatment process equipment and initiates an audible or visual alarm when the operating capacity level or another predetermined level is reached
- iv Level indicator A device is used to visually display the level of hazardous waste in treatment process equipment if a level indicator is used for overfill prevention, the indicator must be monitored during liquid transfers or checked prior to transfers to ensure that sufficient capacity exists in the receiving unit Level indicators include sight gauges and level meters
- v Bypass A device or plumbing arrangement is used to divert flow of hazardous waste from the treatment process equipment being filled to a tank of sufficient capacity once the operating capacity or other predetermined level within the primary receiving tank has been reached

6 Feed Mechanism

The Permittee will use one of the following feed mechanisms or an equivalent transfer mechanism for treatment processes

- a Vacuum transfer Liquid hazardous waste will be transferred within the treatment process by creating a vacuum in the process equipment Transfer lines may be permanent or temporary and will be in good condition
- b Gravity drain Liquid hazardous waste will be allowed to drain by gravity through permanent or temporary transfer lines or equipment
- c Operator transfer Hazardous waste will be manually transferred within the treatment process by process operators
- d Pump transfer Liquid hazardous waste will be pumped into the treatment process equipment through permanent or temporary transfer lines

7 Process Control

Temperature pressure or other treatment variables may be used to monitor and/or control a treatment process The Permittee will monitor the treatment process for any control variable(s) specified in Part V Section C Treatment Unit Unit Specific Conditions

If a maximum or minimum limit specified for a control variable is reached the Permittee will either immediately correct the operation to within specified process control variable limits or cease the treatment process operation The Permittee may restart treatment process operations once the conditions are restored to within the specified limits for the control variables and any system problems are corrected The Permittee will use one of the following mechanisms to monitor control variables

- a Continuous monitoring with alarm A device providing continuous monitoring with an audible or visual alarm set at or within the control variable limits

239

- b Instrument monitoring An instrument with a visual readout that is monitored by a process operator who maintains control variables within specified limits during operations
- c Visual monitoring A process operator visually monitors and controls variables such as reaction time within specified limits during treatment process operations

8 Management of Ignitable or Reactive Wastes

Ignitable or reactive wastes will not be placed into any treatment process unless the process is protected by use of signs prohibiting smoking open flames or welding an inert atmosphere or enclosed vents isolated from sources of ignition or reaction.

9 Inspections

Treatment units will be inspected once each operating day. If a treatment process within a treatment unit is not operating and all hazardous wastes have been removed, no inspections will be necessary. The treatment unit will be visually inspected in accordance with a unit specific inspection sheet which is included in the Site inspection plan.

10 Staging Areas

Each treatment process may include a container staging area for the management of waste prior to or following treatment. Containers of waste located within the staging areas are subject to Standard Conditions for management of containers in B 4 of this section. Waste capacities for staging areas associated with individual treatment processes will be identified in Part V Section C Treatment Units Unit Specific Conditions.

For recordkeeping purposes, the staging areas will be considered a part of the treatment process and any containers of waste located in the staging areas will be identified as being within the treatment process. Staging areas located adjacent to or in the vicinity of the treatment process it is associated with will be designated in the operating record for the unit. Locations of staging areas within gloveboxes need not be specifically identified in the operating record but must be identified on the Treatment Process Information Sheet at the end of this section.

Containers of waste may be staged for periods of time necessary to support the operation of the treatment process. If the treatment process becomes non-operational for any reason and will remain so for an extended period of time, all staged containers of waste will be moved to permitted storage until the treatment process returns to operational status.

11 Repair and Certification of Treatment Units

If a release occurs from a treatment process, the Permittee will repair the treatment process prior to returning it to service. Major repairs for treatment processes which include tank systems will be certified by a qualified independent registered Professional Engineer. The certification will be submitted to the Division within seven days after returning the treatment process to service.

240

C TREATMENT UNITS UNIT SPECIFIC CONDITIONS

This section contains specific information regarding the permitted treatment units and the individual treatment processes within them. In addition flow diagrams of the individual treatment processes, diagrams of the process equipment, and secondary containment calculations are provided at the end of this section. Operating capacities are provided for information purposes and are approximate.

1 Unit 371.3 Building 371

This unit contains the Caustic Waste Treatment System (CWTS). The CWTS will be used to pre treat liquid wastes prior to final treatment in other treatment processes at the Site.

a Unit 371 3A Caustic Waste Treatment System

The CWTS is used to treat hazardous waste by chemical precipitation and filtration. Chemical precipitation is a process by which a soluble substance is converted to an insoluble form either by a chemical reaction or by changes in the composition of the solvent to diminish solubility of the substance in it. In the case of the CWTS chemical precipitation is conducted to neutralize the process solution and to remove radionuclide material and RCRA regulated toxicity characteristic (TC) metals concentration. Pre and post treatment analysis will be conducted in accordance with approved process procedures. Specific pre treatment analyses to be completed will include pH/normality, chloride content, radionuclide concentration (plutonium [Pu], americium [Am], uranium [U]) and RCRA TC metals. Post treatment analyses to be conducted includes pH and radionuclide concentration.

The CWTS includes two gloveboxes containing treatment process equipment, four process solution feed receiver tanks and two process filtrate solution receiver tanks. Glovebox 18 contains equipment used for the neutralization, precipitation and initial filtration of process solutions to remove radionuclide material and RCRA regulated TC metals. Glovebox 2404 contains final filtration equipment for the process solutions.

Processing is conducted on a batch basis within the CWTS. The solutions to be processed are pumped from the D 2401 tanks into two glass precipitation vessels (clarifiers) in Glovebox 18 and mixed with a calculated weight of $Mg(OH)_2$. The amount of $Mg(OH)_2$ added to each batch of process solution is based on the calculated amount necessary to raise the pH of the solution from its current value (determined by sampling and analysis) to the optimum pH range for precipitation (pH 6-9) plus a small additional amount to maximize the removal of the radionuclide material. This process results in the formation of a precipitate which is removed from the solution by filtration. The filtrate solution is then captured in two additional glass columns (decanters) in Glovebox 18 before being pumped to Glovebox 2404. Glovebox 2404 contains two sets of three filters each for the final filtration of the treated solution. Following the final filtration, the treated process solution will be transferred to the D 2402 tanks.

241

The precipitate which is not considered a RCRA waste is allowed to air dry and is then placed on a hot plate in a separate glovebox to complete the drying process. Overall treatment process equipment includes four glass columns, several filters, a supply vessel for $\text{Mg}(\text{OH})_2$ and a pump, all of which is contained in the identified gloveboxes. Specific information about the process and the equipment within it is included at the end of this section as Figures V 1, V 2, and V 3.

February 6 1997

V 7

242

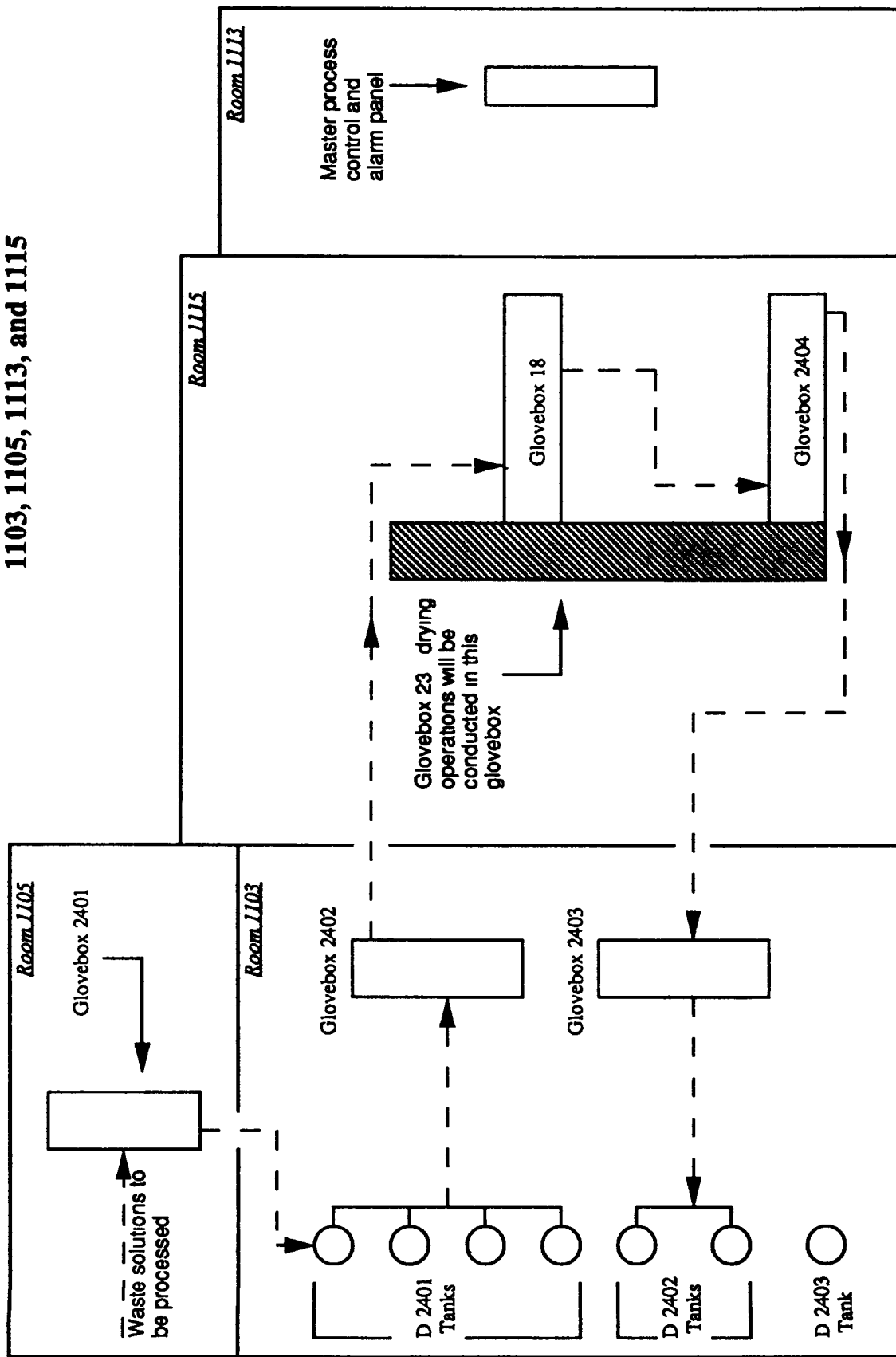
TREATMENT PROCESS INFORMATION SHEET

1a Unit 371.3A Caustic Waste Treatment System

Location	Building 371 Rooms 1103 1105 1115 and 1113
Process Equipment	Glovebox 18 and 2404 Tanks D 2401A B C and D and D 2402A & B
Treatment Process	Chemical Treatment chemical precipitation of radionuclides and metals from corrosive waste solutions
Design Capacity	
Tanks	725 liters
Treatment Process	50 liters per batch
Operating Capacity	
Tanks	725 liters
Treatment Process	200 liters per day
Dimensions	
Tanks	59 3 inches OD x 7 feet 3 inches T T x 3 inch annulus
Treatment Process	GBox 18 134 inches long x 36 inches wide GBox 2404 140 inches long x 36 inches wide
Waste Codes	D002 D006 D008
Waste Description	Mixed
Secondary Containment	
Type	
Tanks	Coated Concrete
Treatment Process	Glovebox
Minimum Berm Height	
Tanks	0 12 inch
Treatment Process	0 7 inch
Drawing Number	
Tanks	39650 100
Treatment Process	25157 225 and 50407 501
Inspection Method	Visual
Process Control Variables	
Maximum	pH
Minimum	None
final minimum pH of 6	
Overfill Prevention	
Tanks	Level Indicator and/or High Level Alarm
Treatment Process	Automatic Feed Cutoff and/or High Level Alarm
P&ID Drawing Number	
Tanks	39650 001
Treatment Unit	39650 002
Process specific Conditions	None

243

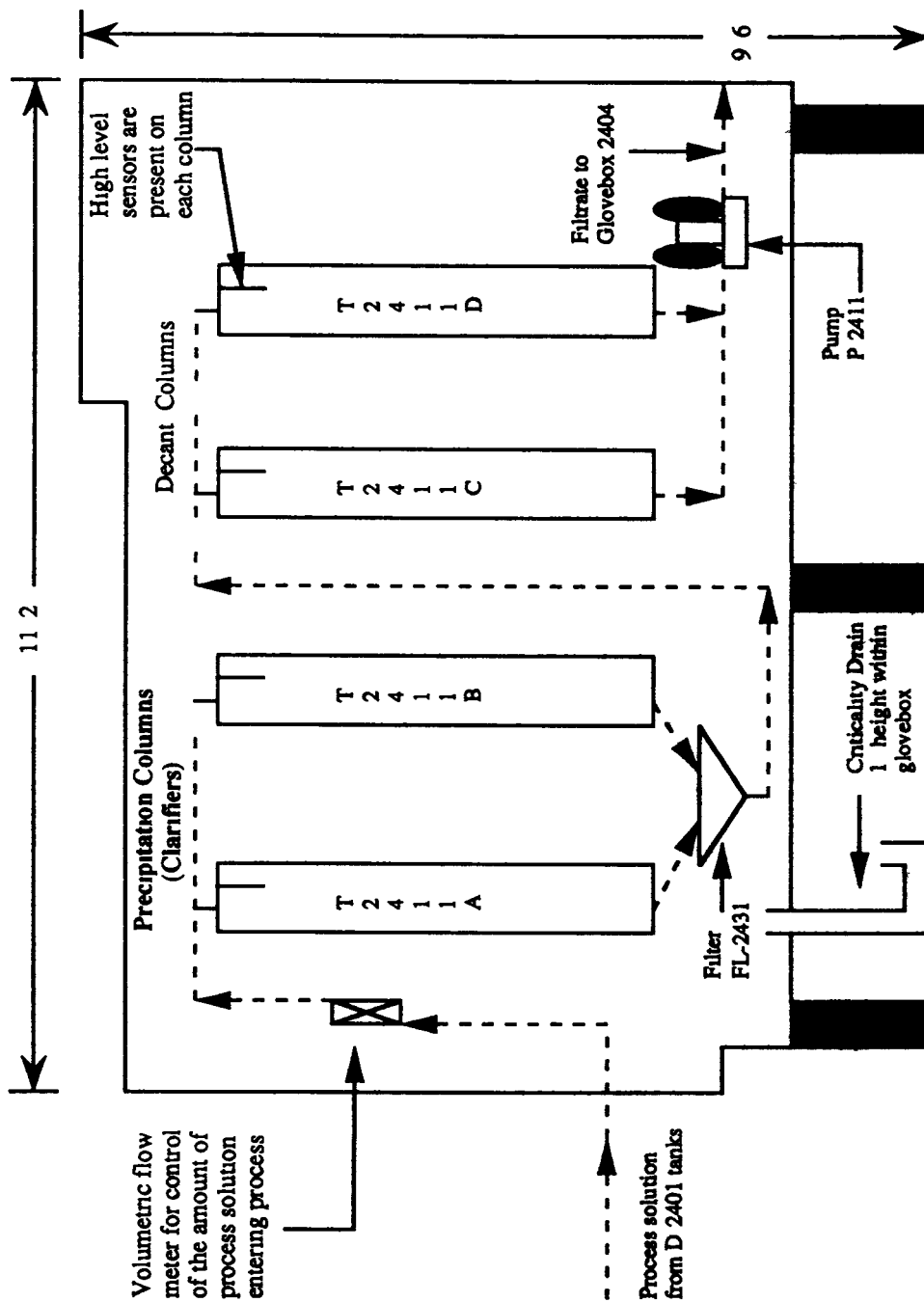
UNIT 371.3A CAUSTIC WASTE TREATMENT SYSTEM, BUILDING 371, ROOMS 1103, 1105, 1113, and 1115



NOTES

- 1) This drawing is not to scale and does not depict process equipment in its actual location

RCRA Unit 371 3A CAUSTIC WASTE TREATMENT SYSTEM PRECIPITATION/FILTRATION, GLOVEBOX 18



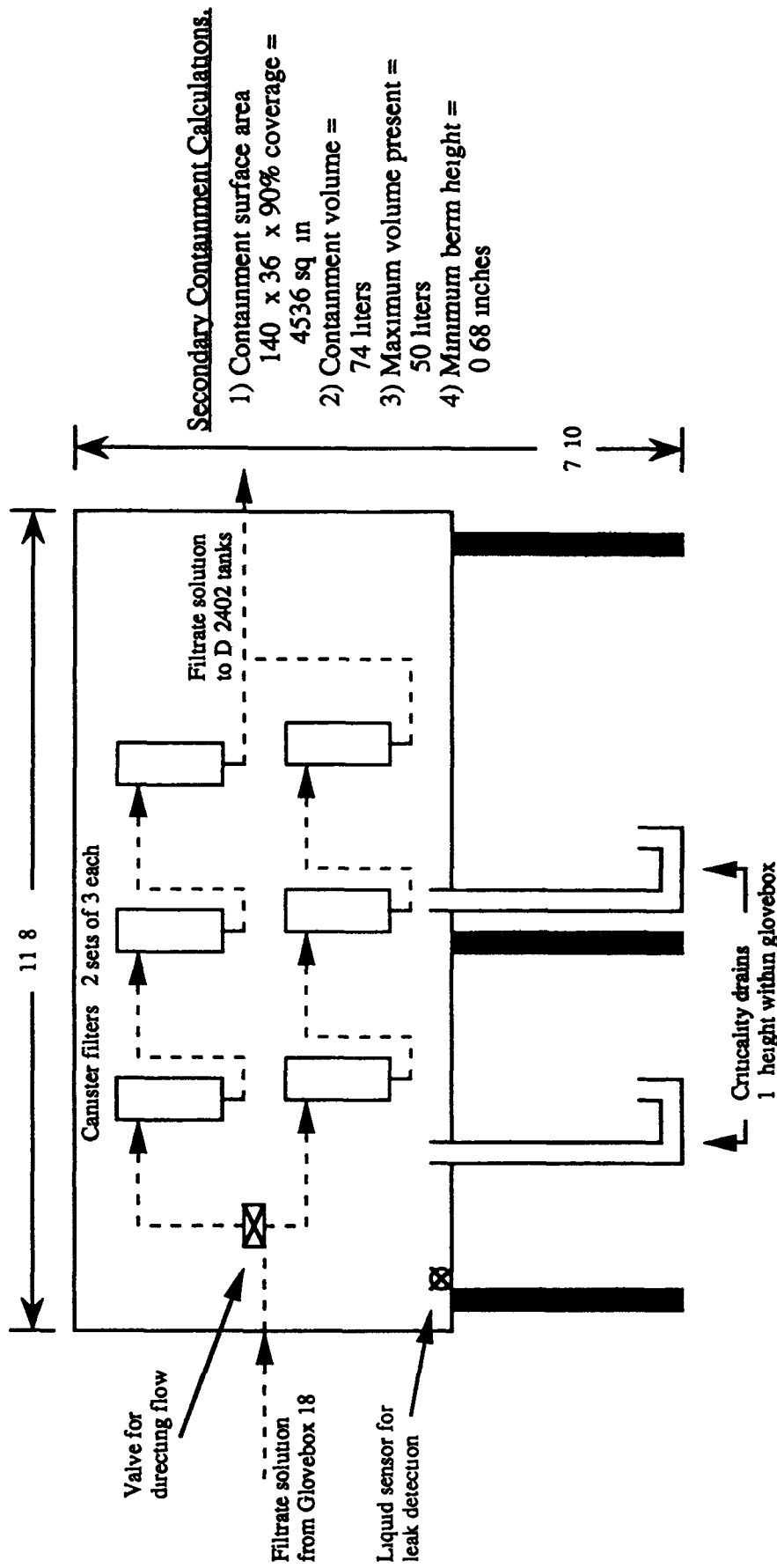
Secondary Containment Calculations.

- 1) Containment surface area
134 x 36 x 90% coverage =
4342 sq in
- 2) Containment volume =
71 liters
- 3) Maximum volume present =
50 liters
- 4) Minimum berm height =
0 7 inches

Notes

- 1) Precipitation columns T 2411A and T 2411B are filled through volumetric flow meters which allow only a preset volume of process solution to be transferred to the precipitation columns. In addition, both the precipitation and clarifier columns are equipped with high level sensors
- 2) In the unlikely event that a criticality drain were to overflow it would drain to the floor of the room
- 3) This drawing is not to scale and may not depict the process equipment in its actual location.

FIGURE V.3 RCRA Unit 371 3A CAUSTIC WASTE TREATMENT SYSTEM
PRECIPITATION/FILTRATION, GLOVEBOX 2404



NOTES

- 1) Glovebox 2404 is equipped with a liquid sensor which will detect the presence of liquids on the floor of the glovebox and alert process operators by both audible and visual alarms
- 2) In the unlikely event that a criticality drain were to overflow it would drain to the floor of the room
- 3) This drawing is not to scale and may not depict the process equipment in its actual location

Pages V-9 through V-16 are reserved

2 Unit 374.3 Aqueous Process Waste Treatment

There are several hazardous waste treatment processes in Building 374 used for the treatment of Low level mixed aqueous wastes collected from various locations and buildings at the Site. The treatment processes present in Building 374 are used to neutralize precipitate filter evaporate and solidify the wastes received. The treatment processes are used to remove radioactive and chemical contaminants to produce a cemented sludge saltcrete and to produce recovered product water. The treatment processes are briefly discussed below. Pre and post treatment analysis will be conducted in accordance with approved process procedures and with the facility Authorization Basis.

a Waste Receiving and Neutralization

In this portion of the treatment system Low level mixed aqueous wastes are received and are pH adjusted as necessary.

Incoming wastes are received in a series of holding tanks or containers. Tanks used for the receipt of the regulated mixed aqueous waste include Tanks D-801A, B and C D 802A B and C D-804A B C and D D 806 D-807A and B D 808 D-811A and B D 843 and D 875. Tanks D 231A and B are also included in this system as buffer tanks to be used when the generation of waste requiring processing through Building 374 exceeds the capacity of the tanks identified previously.

Following receipt and pH adjustment (if required) aqueous wastes are transferred to the radioactive decontamination process or to the multiple effect evaporators.

b Radioactive Decontamination

This process is used to remove radioactive material from aqueous wastes by chemical precipitation. The process consists of three stage precipitation flocculation and clarification. The number of stages of radioactive decontamination the waste will be subjected to depends on the level of alpha activity in the waste. This waste parameter is checked following collection in the previously identified tanks.

Wastes to be processed through this part of the treatment system are received from any of the following sources: Tanks D 825A and B (filtrate being returned for processing from the sludge filtration process); Tanks D 824A and B (pH adjusted waste from waste receiving and neutralization and solution decanted from the clarifier in first stage radioactive decontamination); and Tanks D-811A and B (pH adjusted waste from waste receiving and neutralization). Wastes subject to three stage precipitation are collected in Tank D 812. Waste solutions from D 812 are continuously pumped to the first stage reactor Tank D 813. Reagents are added to precipitate radioactive material and to adjust the pH of the solution. The contents of the reactor flow continuously by gravity to the First Stage Flocculator Tank D-814.

A flocculent is added continuously in D-814 to aid in the agglomeration of the precipitate. The tank contents overflow continuously to the First Stage Clarifier Tank D 815. Precipitate slurry is drawn off the bottom of the clarifier to Tanks D 824A and B. The clear supernatant liquid is pumped to the Second Stage Feed Tank D 816.

The second and third stage feed tanks D-816 and D 820 receive feed from the preceding clarifier (D 815 and D 819 respectively) and from the Second and Third Stage Feed Storage Tanks D 804A B C and D. The second and third stage reactors flocculators and clarifiers function exactly as described previously for the first stage. Clear effluent from the second or third stage clarifier is transferred to clarifier effluent holding tanks D

826A and B The effluent may pass through a precoat filter FL 831 which accomplishes a final solids separation when necessary

c Multiple Effect Evaporation

This is a four stage evaporation system that results in the production of a concentrated salt solution and evaporator condensate (recovered product water) The evaporator condensate is discharged to cooling towers and then to the Steam Plant as a non hazardous waste

The Evaporator Feed Tank D 827 receives waste from Tanks D 231A and B (buffer tanks) D 801A B and C (pH adjusted waste from waste receiving and neutralization) D 802A B and C (waste receiving and neutralization) and D-826A and B (decontamination waste from radioactive decontamination) From the feed tank the solution is pumped into the first effect of the evaporator T 802 A circulation pump continuously circulates the liquid in the first effect by drawing liquid from the bottom of the first effect vapor body (T 802) pumping it through the first effect heat exchangers (E 806A or B) and discharging it near the liquid level in the first effect vapor body Water that evaporates in the first effect passes through the second effect heat exchanger (E 807) to heat that effect and is collected in Flash Tank D 830 the partially concentrated liquid remaining in the first effect continuously feeds to the second effect

The liquid in the second effect circulates in the same manner as in the first effect. The evaporated water from the second effect passes through the third effect heat exchanger to heat that effect and collects in Flash Tank D-832 The second effect concentrate continuously feeds the third effect

The third and fourth effects operate in the same manner Water that evaporates in the fourth effect condenses in the main surface condenser (E 810) and collects in Condensate Tank D-834 The concentrated liquid remaining in the fourth effect is pumped to Tanks D 826C or D-878 The liquid in Tank D-826C can be transferred either to Tank D-878 or to the saltcrete mixing station Tank D 878 feeds the spray dryer in the salt immobilization system The condensate water from the flush tanks and the condensate tank is sent to utilities for disposition to either the boiler plant or the cooling tower

d Salt Solidification Process

In this process dried salt received from the spray dryer is mixed with cement and water The mixture is placed into crates and allowed to cure

The concentrated salt solution (approximately 38% dissolved salts) is pumped from Tank D 826C into D-878 the spray dryer feed tank From there the material is pumped to the spray dryer W-803 where it is dried in a hot air stream

From the spray dryer salt laden air passes into the baghouse filter where a series of cloth filter bags separate salt from the air stream The accumulated salt is collected is collected in Tank T 884 and then transferred into two saltcrete mixing tanks T 883A and B

Dry salt product is mixed in T 883A and B with Portland cement and a portion of the concentrated salt solution from Tank D-826C domestic water raw water or Building 374 recovered product water This cemented product, called saltcrete is allowed to set up in plywood half boxes lined with plastic It is then transferred for storage in a regulated storage unit pending shipment and disposal

e Sludge Solidification Process

This process receives sludge generated from the operation of the radioactive decontamination process and from the acid neutralization system (not currently operating) The sludge is dewatered collected in a drum and solidified through the introduction of absorbants and cement

Filter Feed Tanks D 824A and B receive waste from D-808 and clarifier bottoms from the three stage radioactive decontamination process These tanks also may receive packaged waste from the Building 374 dock and acid descaling waste from Tank D 845 The liquid in the filter feed tanks is decanted to the first stage precipitation feed tank, D 812 and the sludge is piped to either of the rotary drum vacuum filters FL 802A and B which are located inside a large glovebox The filter drum is coated with a mixture of diatomite and either water or filtrate which is prepared in precoat tank D-848 The concentrated slurry from the filter feed tanks D-824A and B is fed to the rotary drum filter and the filtrate is drawn through the precoat by vacuum leaving a sludge of precipitated solids on the surface of the filter media An advancing blade (scraper) on the rotary drum filter continuously removes the sludge and a thin layer of the precoat

Tanks D-825A and B collect filter effluent from the rotary drum filters and transfer it to the first stage of the radioactive decontamination process The wet sludge from the vacuum filter is transferred by conveyor directly into a 55 gallon drum Cement and absorbants are metered into the drum with the sludge to absorb free liquids Exhaust air from the glovebox enclosing the vacuum filters and cementation equipment is vented to the building scrubber T 807

250

TREATMENT PROCESS INFORMATION SHEET

a Unit 374.3 Aqueous Waste Receiving and Neutralization

Location	Building 374 Room 2804 and 3801	
Process Equipment	Tanks D-801A B and C D 802A B and C D-804A, B C and D D 806 D-807A and B D-808 D-811A and B D 843 and D 875	
Treatment Process	Chemical Treatment neutralization or adjustment of pH	
Design Capacity		
Tanks	D-801A B C	33 000 gallons
	D-802A B C	23 000 gallons
	D-804A B C D	10 000 gallons
	D 806	1 100 gallons
	D-807A B	2,200 gallons
	D 808	200 gallons
	D 811A B	12 000 gallons
	D 843	640 gallons
	D 875	500 gallons
Operating Capacity		
Tanks	D-801A B C	28 050 gallons
	D-802A B C	19 550 gallons
	D-804A B C D	8,500 gallons
	D 806	935 gallons
	D 807A B	1 870 gallons
	D 808	170 gallons
	D 811A B	10,200 gallons
	D 843	544 gallons
	D 875	425 gallons
Dimensions		
Tanks	D 801A B C	16 feet T T x 18 feet D
	D 802A B C	16 feet T T x 15 feet D
	D 804A B C D	14 feet high x 11 feet D
	D 806	7 feet T T x 5 feet D
	D 807A B	8 feet T T x 7 feet D
	D 808	4 feet T T x 3 feet D
	D 811A B	14 feet high x 12 feet D
	D 843	4 5 feet T T x 4.5 feet D
	D 875	5 feet T T x 4 feet D
Waste Codes	D001 D002 D004 D011 F001 F003 F005 F009 P Series and U series	
Waste Description	Mixed	
Secondary Containment		
Type	Coated Concrete	
Minimum Berm Height	10 6 inches	
Drawing Number		
Inspection Method	Visual	
Process Control Variables	pH	
Maximum		
Minimum		

251

Overfill Prevention

High level alarm

**P&ID Drawing Number
Tanks**

D-801A B C	39650-2010
D-802A B C	39650 2011
D-804A B C D	39650-2024
D 806	39650-2032
D 807A B	39650 2031
D 808	39650-2034
D-811A B	39650-2025
D 843	39650-2033
D 875	39650-2024

Special Unit Conditions

None

February 6 1997

V 21

252

TREATMENT PROCESS INFORMATION SHEET

b Unit 374.3 Radioactive Decontamination

Location	Building 374 Room 3801	
Process Equipment	Tanks D-812 through D-823 D 826A B	
Treatment Process	Chemical Treatment	chemical precipitation of radionuclides
Design Capacity Tanks	D 812	2 600 gallons
	D 813	250 gallons
	D 814	750 gallons
	D 815	3 100 gallons
	D 816	3 600 gallons
	D 817	300 gallons
	D 818	900 gallons
	D 819	4 400 gallons
	D 820	5 100 gallons
	D 821	520 gallons
	D 822	1 500 gallons
	D 823	6 300 gallons
	D 826A B	20 000 gallons
Operating Capacity Tanks	D 812	2 210 gallons
	D 813	213 gallons
	D 814	638 gallons
	D 815	2 635 gallons
	D 816	3 060 gallons
	D 817	225 gallons
	D 818	765 gallons
	D 819	3 740 gallons
	D 820	4 335 gallons
	D 821	442 gallons
	D 822	1 275 gallons
	D 823	5 355 gallons
	D 826A B	17 000 gallons
Dimensions Tanks	D 812	9 feet T T x 7 feet OD
	D 813	4 feet T T x 3 feet OD
	D 814	6 feet T T x 5 3 feet OD
	D 815	9 feet T T x 11 feet OD
	D 816	10 feet T T x 8 feet OD
	D 817	4 5 feet T T x 3 5 feet OD
	D 818	6 feet high x 5 feet D
	D 819	7 feet high x 13 feet D
	D 820	11 feet T T x 9 feet OD
	D 821	5 feet T T x 4 feet OD
	D 822	7 5 feet high x 6 feet D
	D 823	9 feet T T x 16 feet OD
	D 826A B	13 8 feet T T x 15 feet D
Waste Codes	D001 D002 D004 D011 F001 F003 F005 F009 P series U series	

Waste Description	Mixed	
Secondary Containment		
Type	Coated concrete	
Minimum Berm Height	10 6 inches	
Drawing Number		
Inspection Method	Visual	
Process Control Variables	Sludge quantity	
Maximum	2/3 full	
Minimum	1/2 full	
Overfill Prevention	High level alarm	
P&ID Drawing Number		
Tanks	D 812	39650 2026
	D 813	39650 2026
	D 814	39650-2026
	D 815	39650 2026
	D 816	39650-2027
	D 817	39650 2027
	D 818	39650 2027
	D 819	39650-2027
	D 820	39650 2028
	D 821	39650-2028
	D 822	39650-2028
	D 823	39650-2028
	D 826A B	39650-2012
Special Unit Conditions	None	

February 6 1997

V 23

254

TREATMENT PROCESS INFORMATION SHEET

c Unit 374.3 Multiple Effect Evaporation

Location	Building 374 Rooms 3810 4814 and Outside
Process Equipment	Tanks T 802 T 803 T 804 T 805 D 827 D 830 D 832 D-834 D-876 heat exchangers and pumps
Treatment Process	Thermal treatment evaporation of process waste to separate waste from product and concentrate waste portion for further treatment.

Design Capacity Tanks	D 827	8 000 gallons
	D 830	122 gallons
	D 832	122 gallons
	D 834	765 gallons
	D 876	122 gallons
	T 802	3 606 gallons
	T 803	4 645 gallons
	T 804	5,553 gallons
	T 805	33,013 gallons

Operating Capacity Tanks	D 827	6 800 gallons
	D 830	104 gallons
	D 832	104 gallons
	D 834	651 gallons
	D 876	104 gallons
	T 802	To be determined
	T 803	To be determined
	T 804	To be determined
	T 805	To be determined

Dimensions Tanks		
D 827		11 feet T T x 11 feet D
D 830		5 feet T T x 2 feet OD
D 832		5 feet T T x 2 feet OD
D 834		6 feet T T x 4 4 feet OD
D 876		5 feet H X 2 feet D
T 802		16 feet T T x 6 feet D
T 803		15 feet T T x 7 feet D
T 804		14 feet T T x 8 feet D
T 805		32 feet H x 13 feet D

Waste Codes	D001	D002	D004	D011	F001	F003	F005	F009	P
Waste Description	series U series Mixed								

Secondary Containment Type	Tanks	Coated concrete (Rooms 3810 and 4814) or Flexible membrane liner (outside)
----------------------------	-------	--

Minimum Berm Height Tanks	Rooms 3810 and 4814 Outside	2 4 inches 3 1 feet
------------------------------	--------------------------------	------------------------

255

Drawing Number Tanks	D 827	39650-2310
	D 830	39650-2310
	D 832	39650-2310
	D 834	39650-2310
	D 876	39650-2310
	T 802	39650-2311
	T 803	39650-2311
	T 804	39650-2311
	T 805	39650-2311
Inspection Method	Visual	
Process Control Variables	Pressure / temperature	
	Maximum	14 2 psig / 112 C
	T 802	7 1 psig / 97 C
	T 803	N/A / 87 C
	T 804	N/A / To be determined
	T 805	N/A / 90 C
Minimum	T 802	N/A / 60 C
	T 803	1 9 psig / 60 C
	T 804	8 7 psig / To be determined
	T 805	
Overfill Prevention Tanks	High level alarms	
P&ID Drawing Number Tanks	D 827	39650-2013
	D 830	39650-2014
	D 832	39650-2015
	D 834	39650-2016
	D 876	39650-2017
	T 802	39650-2021
	T 803	39650-2014
	T 804	39650-2015
	T 805	39650-2016
Special Unit Conditions	None	

February 6 1997

V 25

256

TREATMENT PROCESS INFORMATION SHEET

d Unit 374.3 Salt Solidification

Location	Building 374 Rooms 3801 3809 and 4802	
Process Equipment	Tanks D 826C D 878 D 883 A and B D 884 Spray Dryer Bag Filter and Pumps	
Treatment Process	Solidification and Stabilization salt solution is dried and then mixed with cement.	
Design Capacity		
Tanks	D 826C	20 000 gallons
	D 878	1 391 gallons
	D 883A and B	200 gallons
	D 884	370 gallons
Operating Capacity		
Tanks	D 826C	17 000 gallons
	D 878	1 183 gallons
	D 883A and B	170 gallons
	D 884	315 gallons
Dimensions		
Tanks	D 826C	13 8 feet T T x 15 feet D
	D 878	6 feet T T x 6 feet D
	D 883A and B	4 5 feet L x 2 8 feet D
	D 884	3 5 feet H x 4 feet D
Waste Codes	D001 D002 D004 D011 F001 F003 F005 F009 P series, U series	
Waste Description	Mixed	
Secondary Containment		
Type		
Tanks	Coated concrete (Rooms 3801 and 3809)	
Minimum Berm Height		
Tanks	Room 3801	10 6 inches
	Room 3809	2 4 inches
Drawing Number		
Tanks	D 826C	39650-2312
	D 878	39650-2310
	D 883A and B	39650-2310
	D 884	N/A
Inspection Method	Visual	
Process Control Variables	Reagent addition (D 883A and B)	
Maximum	To be determined	
Minimum	To be determined	
Overfill Prevention		
Tanks	High level alarm (D 826C and D-878)	

257

P&ID Drawing Number
Tanks

D 826C
D 878
D 883A and B
D 884

39650-2012
39650-2019
39650-2023
39650-2023

Special Unit Conditions

None

February 6 1997

V 27

258

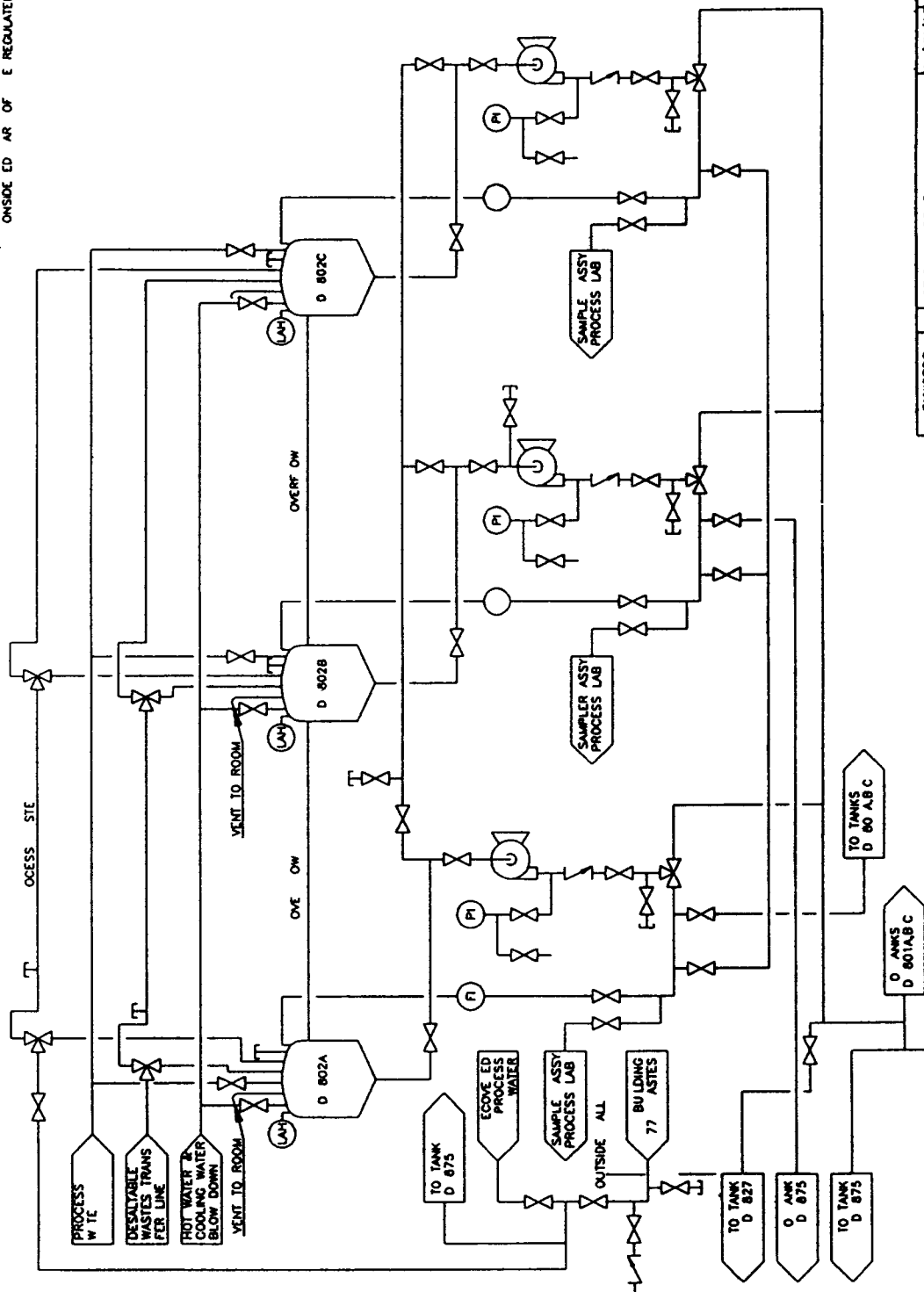
TREATMENT PROCESS INFORMATION SHEET

e Unit 374.3 Sludge Solidification

Location	Building 374 Rooms 2804 and 4805	
Process Equipment	Tanks D 824A and B D 825A and B D 848 (non regulated product mixing tank) and rotary drum filters	
Treatment Process	Solidification and Stabilization sludge is dewatered and then mixed with cement.	
Design Capacity		
Tanks	D 824A and B	5 650 gallons (each)
	D 825A and B	100 gallons (each)
Operating Capacity		
Tanks	D 824A and B	5 368 gallons (each)
	D 825A and B	85 gallons (each)
Dimensions		
Tanks	D 824A and B	10 feet T T x 9 feet D
	D 825A and B	3 feet T T x 2 5 feet D
Waste Codes	D001 D002 D004 D011 F001 F003 F005 F009 P	
Waste Description	series U series Mixed	
Secondary Containment		
Type		
Tanks	Coated concrete	
Minimum Berm Height		
Tanks	Room 2804	10 6 inches
	Room 4805	0 2 inches
Drawing Number		
Tanks	D 824A and B	39650-2312
	D 825A and B	39650-2314
Inspection Method	Visual	
Process Control Variables		
Maximum		
Minimum		
Overfill Prevention		
Tanks	High level alarm	
P&ID Drawing Number		
Tanks	D 824A and B	39650-2035
	D 825A and B	39650-2037
Special Unit Conditions	None	

D 802A, D 802B, D 802C
EVAPORATOR FEED STORAGE TANKS

) EQUIPMENT AND MATERIAL SHOWN IN ABOVE ARE
ON SIDE OF THE REGULATED UNIT

[illegible]

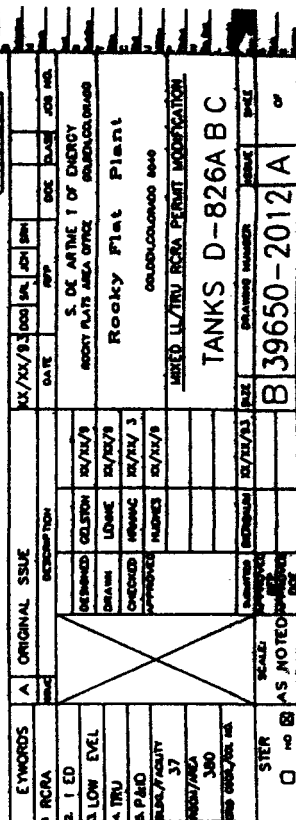
COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

RFP RCRA Permit Modification Request # 14
Draft Mixed LL/TRU 3/1/93 Rev 1

~~III-213~~

72-761

9) EQUIPMENT AND MATERIAL SHOWN ABOVE ARE NO
CONSIDERED PART OF THE REGULATED UN



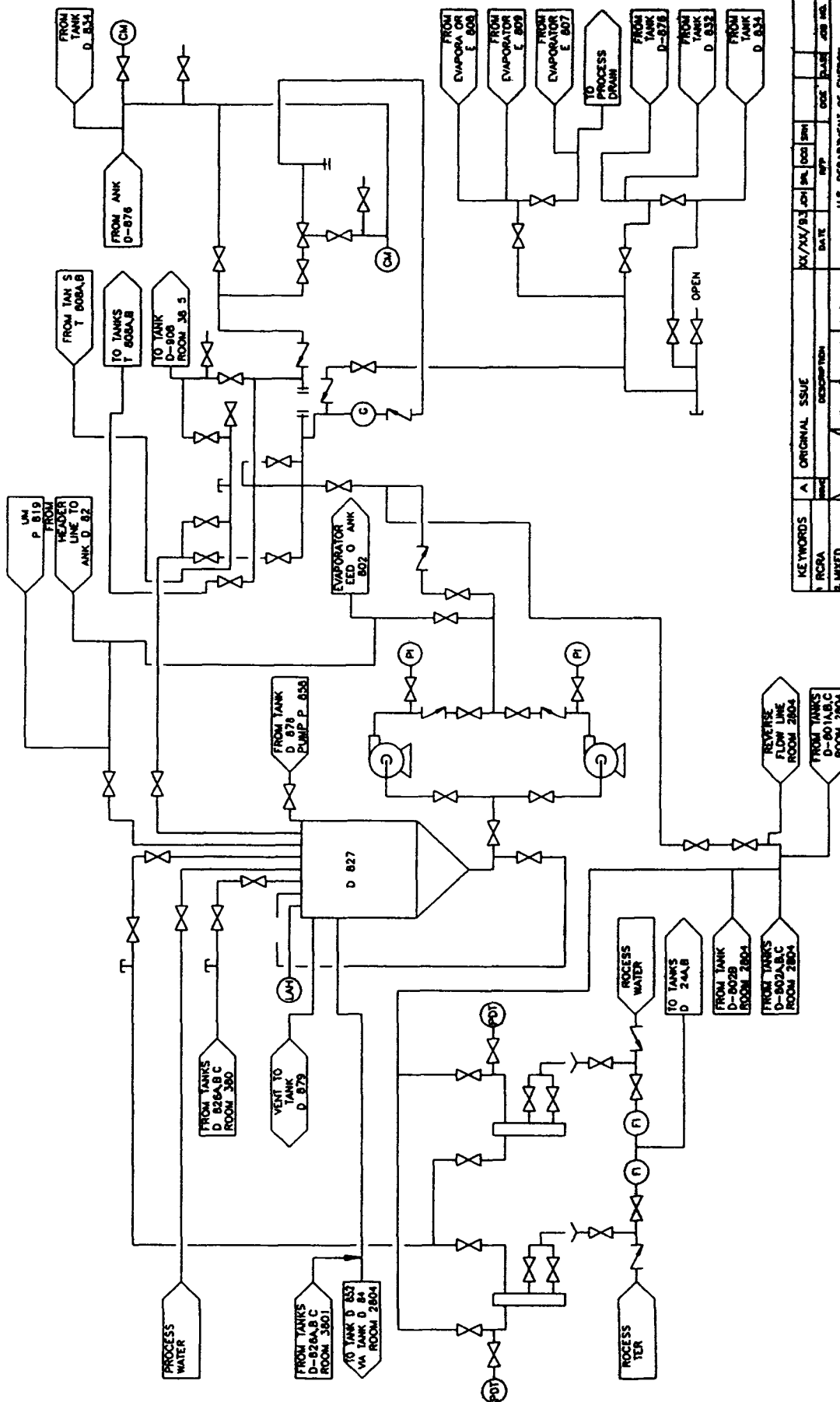
RFP RCRA Permit Modification Request # 14
Draft Mixed LL/TRU 3/1/93 Rev 1

~~HH-314~~

NOTES

1) EQUIPMENT AND MATERIAL SHOWN
CONSIDERED PART OF THE REGULATED UNIT

D-827
EVAPORATOR FEED TANK



KEYWORDS	A	ORIGINAL ISSUE	DATE	REV	ISS	APP	DOC	FILE	JOB	NO
RCRA										
2. MIXED LEVEL										
3. LOW LEVEL										
4. TRU										
5. P&ID										
6. P&ID										
7. P&ID										
8. P&ID										
9. P&ID										
10. P&ID										
11. P&ID										
12. P&ID										
13. P&ID										
14. P&ID										
15. P&ID										
16. P&ID										
17. P&ID										
18. P&ID										
19. P&ID										
20. P&ID										
21. P&ID										
22. P&ID										
23. P&ID										
24. P&ID										
25. P&ID										
26. P&ID										
27. P&ID										
28. P&ID										
29. P&ID										
30. P&ID										
31. P&ID										
32. P&ID										
33. P&ID										
34. P&ID										
35. P&ID										
36. P&ID										
37. P&ID										
38. P&ID										
39. P&ID										
40. P&ID										
41. P&ID										
42. P&ID										
43. P&ID										
44. P&ID										
45. P&ID										
46. P&ID										
47. P&ID										
48. P&ID										
49. P&ID										
50. P&ID										
51. P&ID										
52. P&ID										
53. P&ID										
54. P&ID										
55. P&ID										
56. P&ID										
57. P&ID										
58. P&ID										
59. P&ID										
60. P&ID										
61. P&ID										
62. P&ID										
63. P&ID										
64. P&ID										
65. P&ID										
66. P&ID										
67. P&ID										
68. P&ID										
69. P&ID										
70. P&ID										
71. P&ID										
72. P&ID										
73. P&ID										
74. P&ID										
75. P&ID										
76. P&ID										
77. P&ID										
78. P&ID										
79. P&ID										
80. P&ID										
81. P&ID										
82. P&ID										
83. P&ID										
84. P&ID										
85. P&ID										
86. P&ID										
87. P&ID										
88. P&ID										
89. P&ID										
90. P&ID										
91. P&ID										
92. P&ID										
93. P&ID										
94. P&ID										
95. P&ID										
96. P&ID										
97. P&ID										
98. P&ID										
99. P&ID										
100. P&ID										

COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

RCRA Permit Mod. Request #14
Draft Mixed U/THU 3/1/93 Rev 1

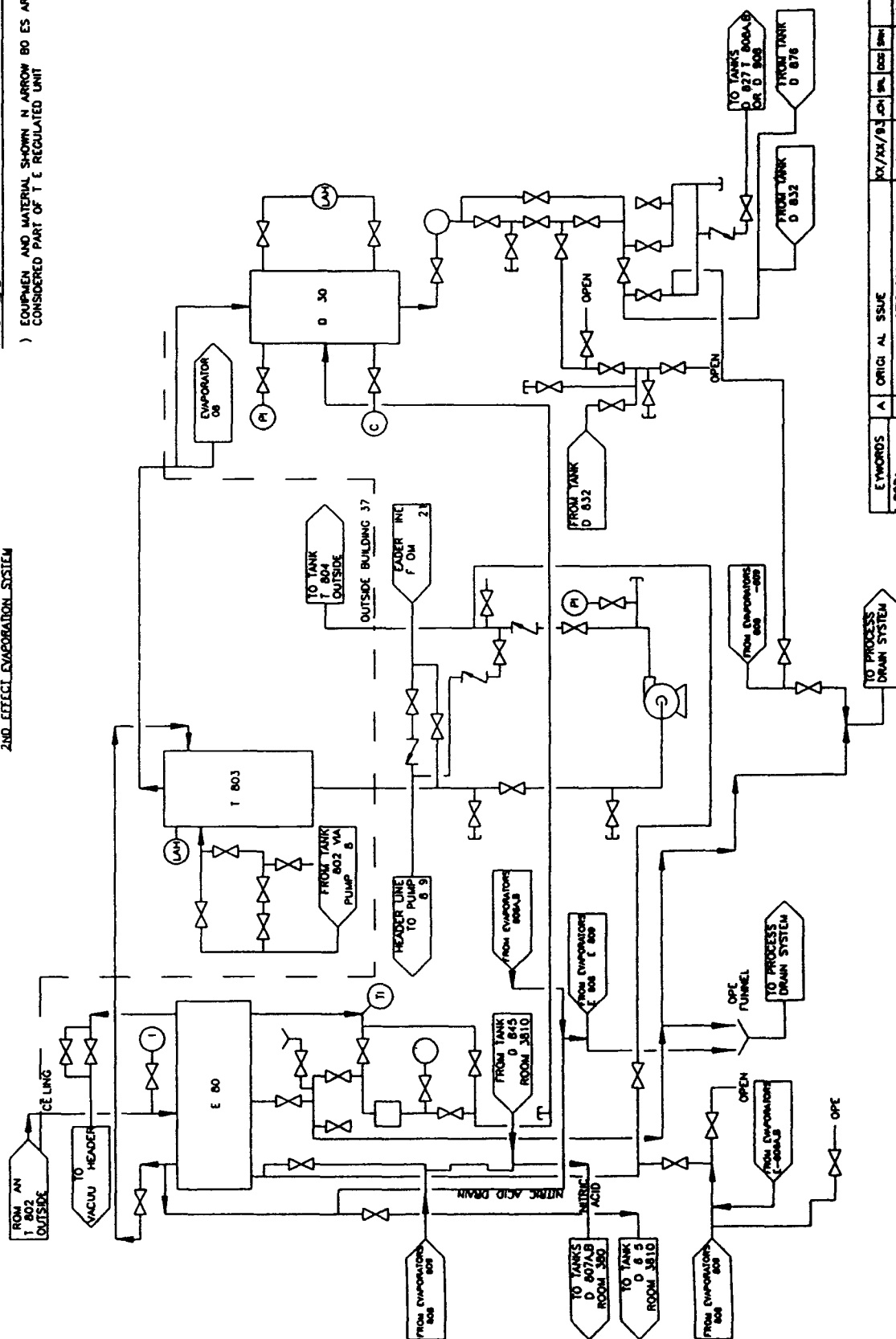
III-215

1/21/93

263

NOTES

) EQUIPMENT AND MATERIAL SHOWN IN ARROW BOXES ARE NOT CONSIDERED PART OF THE REGULATED UNIT

[illegible]

264

COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

RFP RCRA Permit Mod. Request #14
Draft Mixed LL/TRU/ 3/1/83 REV 1

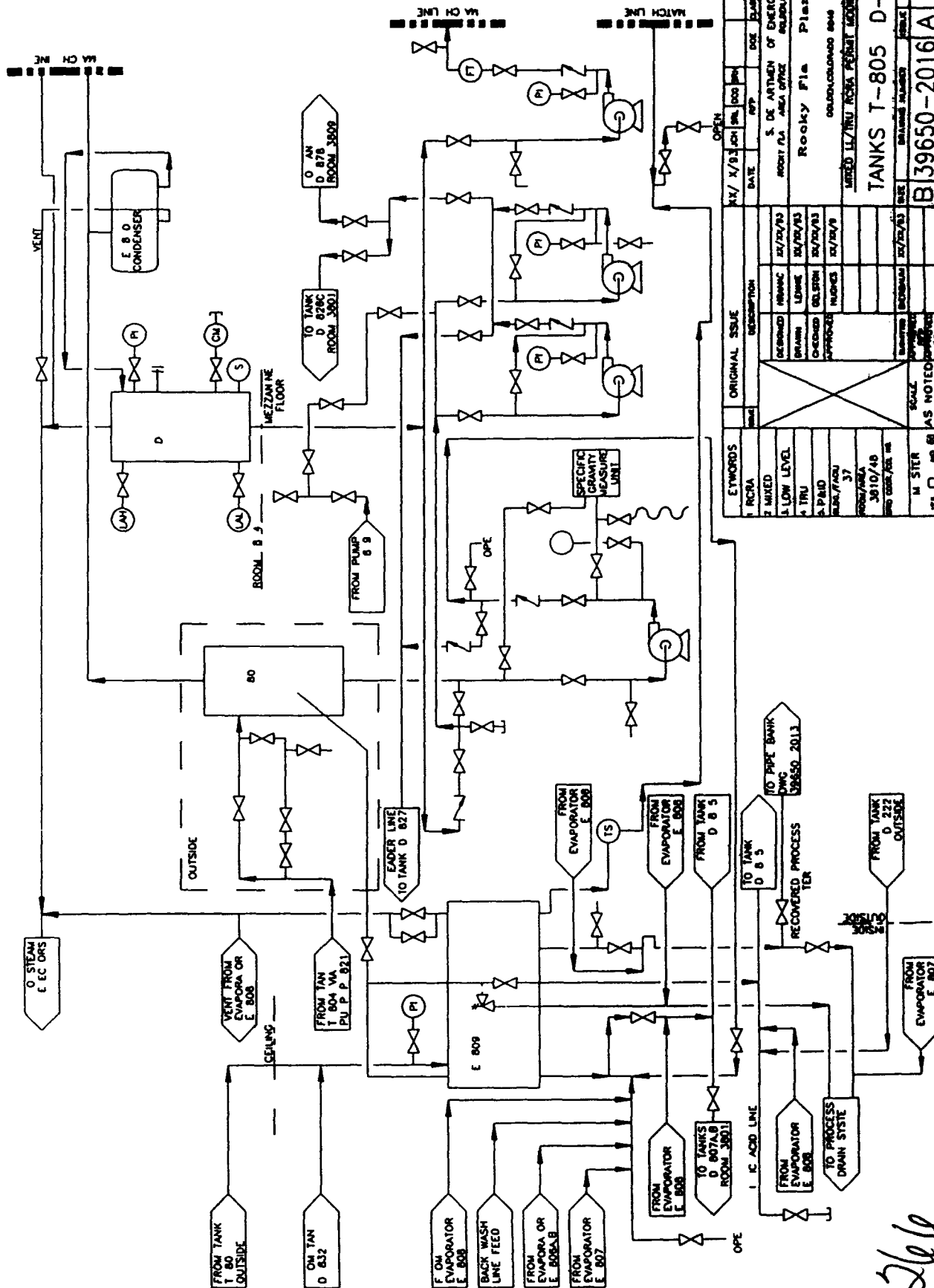
~~HI-216~~

D 834
CONDENSATE RECEIVER TANK

1-603
TH EFFECT VAPOR BODY TANKS

NOTES

- 3) EQUIPMENT AND MATERIAL SHOWN IN ARROW BOXES ARE NOT CONSIDERED PART OF THE REGULATED UNIT

[illegible]

266

COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

RFP RCRA Permit Mod. Request #14
Draft Mixed LL/TRU/ 3/1/93 REV 1

~~HH-218~~

V-75 28a

1) EQUIPMENT AND MATERIAL SHOWN ARROW BOXES ARE NOT CONSIDERED AS OF THE REGULATED UNIT

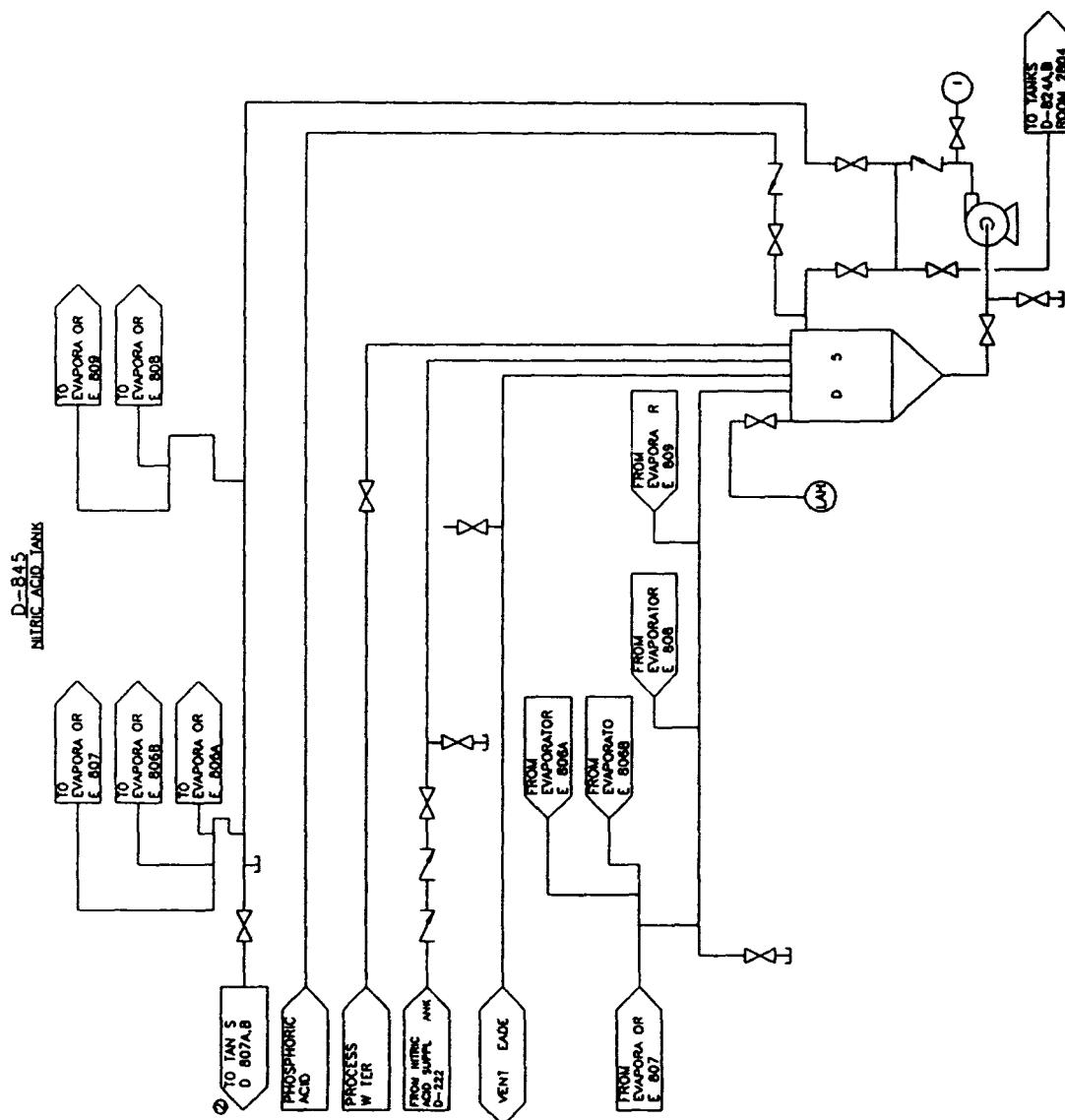
[illegible]

V-~~76~~ 28h

RFP RCRA Permit Mod. Request #14
Draft Mixed LL/TRU/ 3/1/93 REV 1

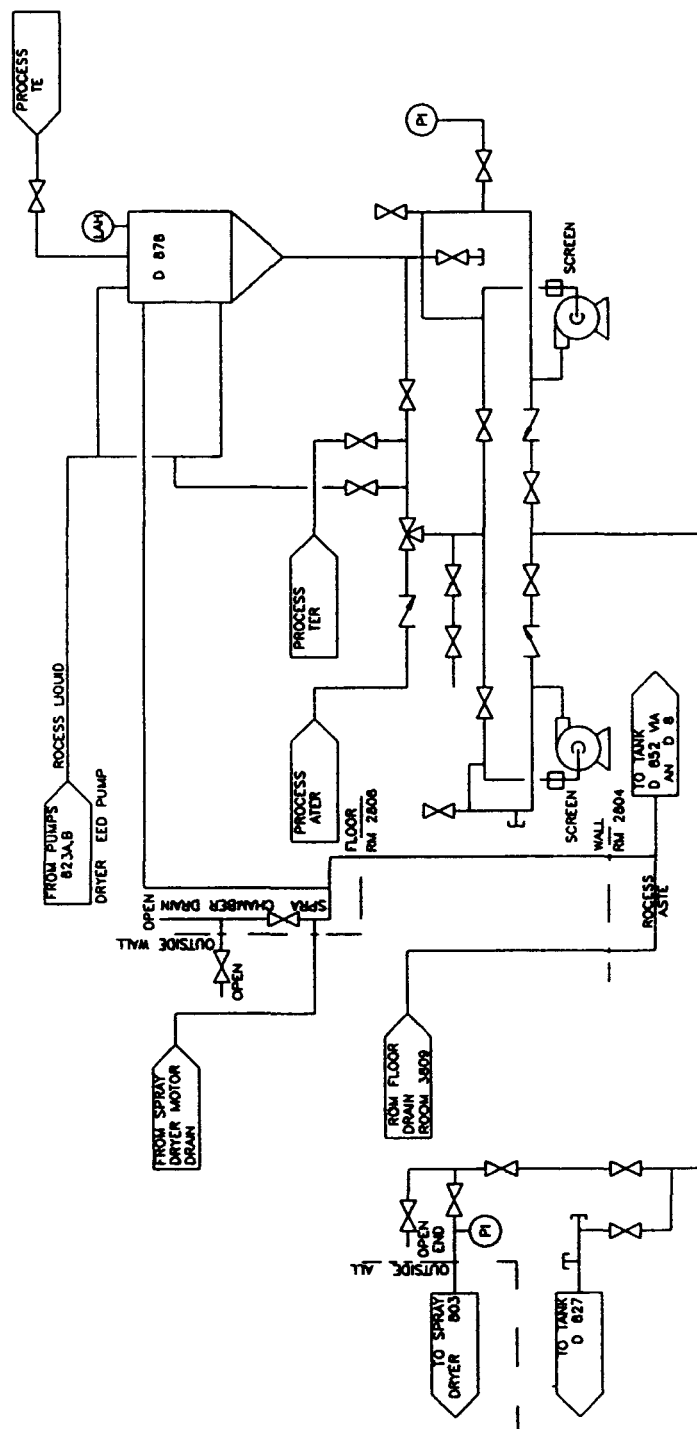
1) EQUIPMENT AND MATERIAL SHOWN IN ARROW BOXES ARE NOT CONSIDERED PART OF THE REGULATED UNIT

2) THIS LINE IS NO. C R ENL SED

[illegible]

NOTES

9) EQUIPMENT AND MATERIAL SHOWN IN ARROW BOXES ARE NOT CONSIDERED PART OF THE REGULATED UNIT

[illegible]

269

COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

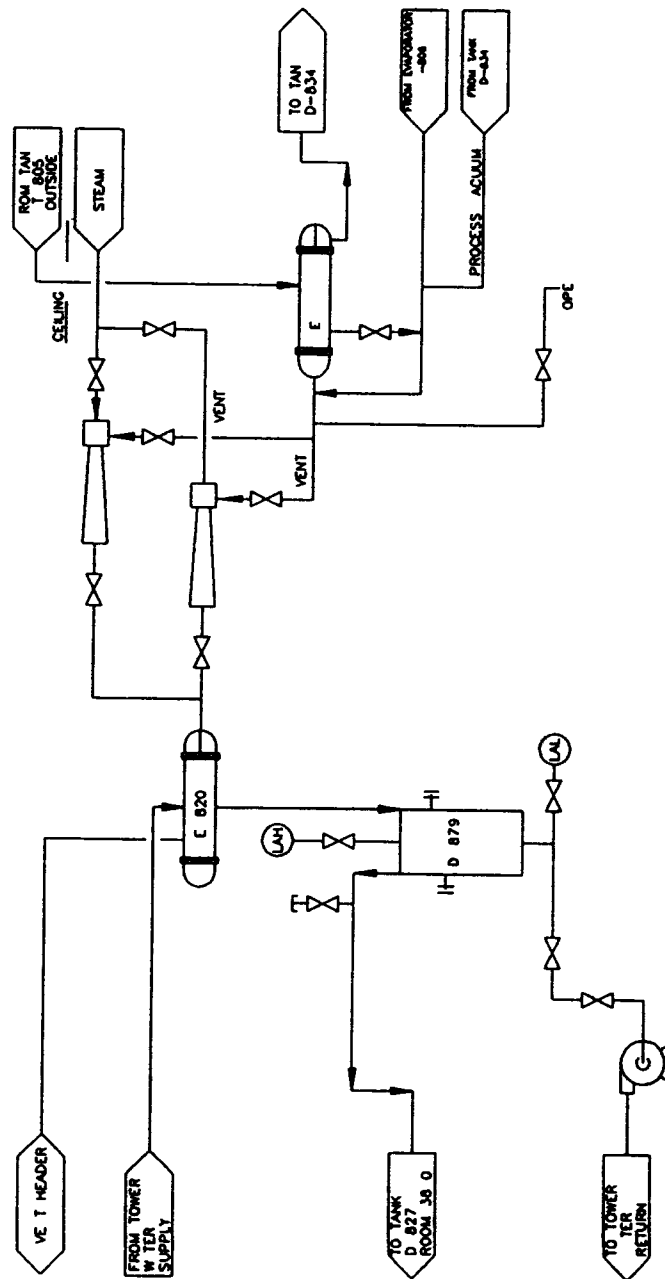
RFP BCRA Permit Modification Request # 14
Draft Mixed 1L/TRU 3/1/93 Rev 1

~~HH-221~~

V-7828

NOTES

) EQUIPMENT AND MATERIAL SHOWN IN ARROW BOXES ARE NOT CONSIDERED PART OF THE REGULATED UNIT

[illegible]

270

COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

~~III-222~~

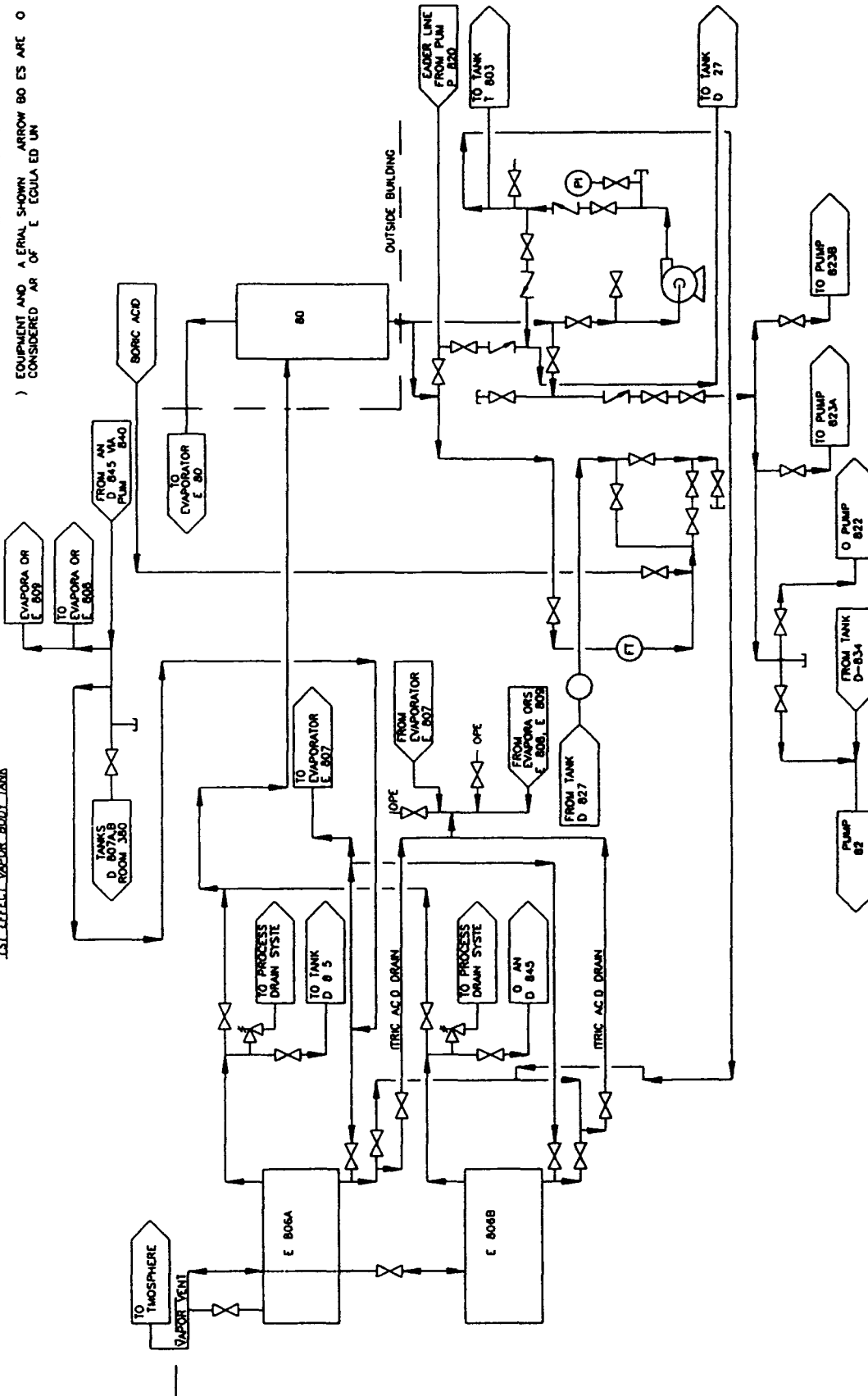
V-7928k

NFP RCRA Permit Mod. Request #14
Draft Mixed IL/TRU/ 3/1/93 REV 1

I-802
151 LEFEL VAPOR BODY TANKS

NOTES

1) EQUIPMENT AND AERIAL SHOWN ARROW BO ES ARE
CONSIDERED AIR OF E EQUALED UN



REV	DATE	BY	CHKD	APP	DOE	PLATE	JOB NO.
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							
61							
62							
63							
64							
65							
66							
67							
68							
69							
70							
71							
72							
73							
74							
75							
76							
77							
78							
79							
80							
81							
82							
83							
84							
85							
86							
87							
88							
89							
90							
91							
92							
93							
94							
95							
96							
97							
98							
99							
100							

COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

RFP RCRA Permit Mod. Request #14
Draft Mixed LL/TBU/ 3/1/83 REV 1

III-223

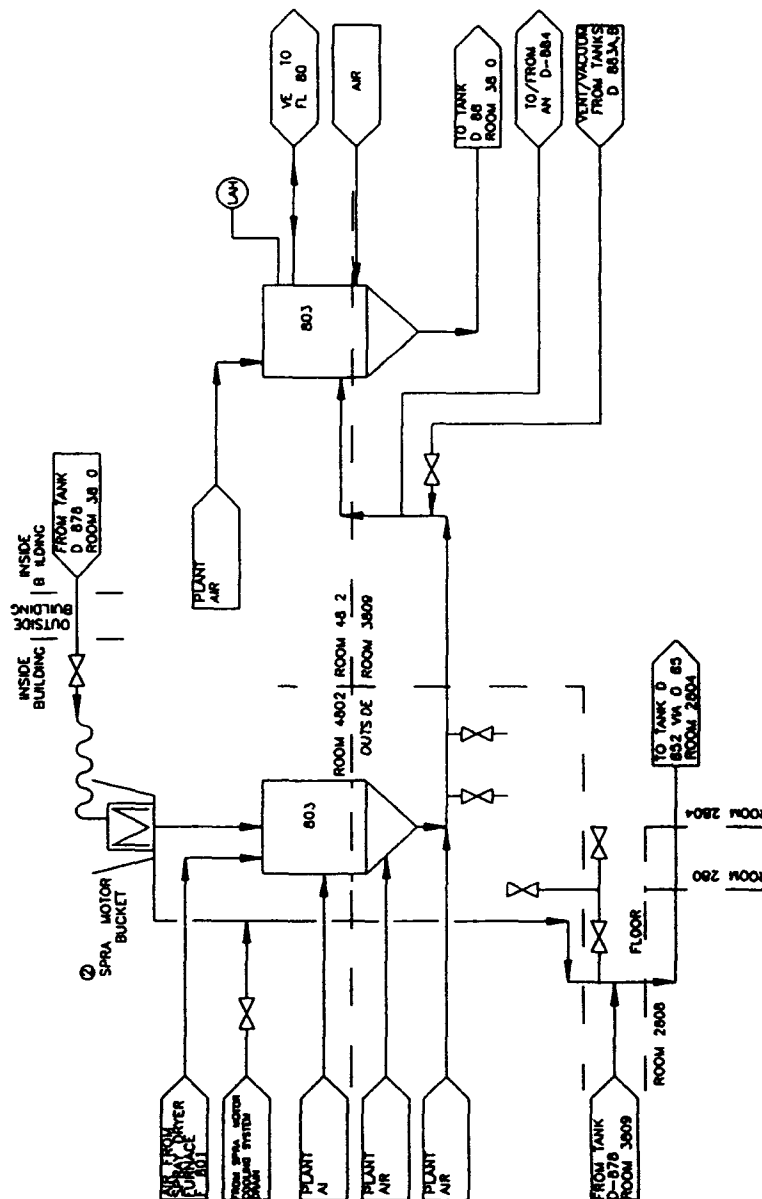
V-80282

271

FL 803
SPRAY DRYER BAG FILTER

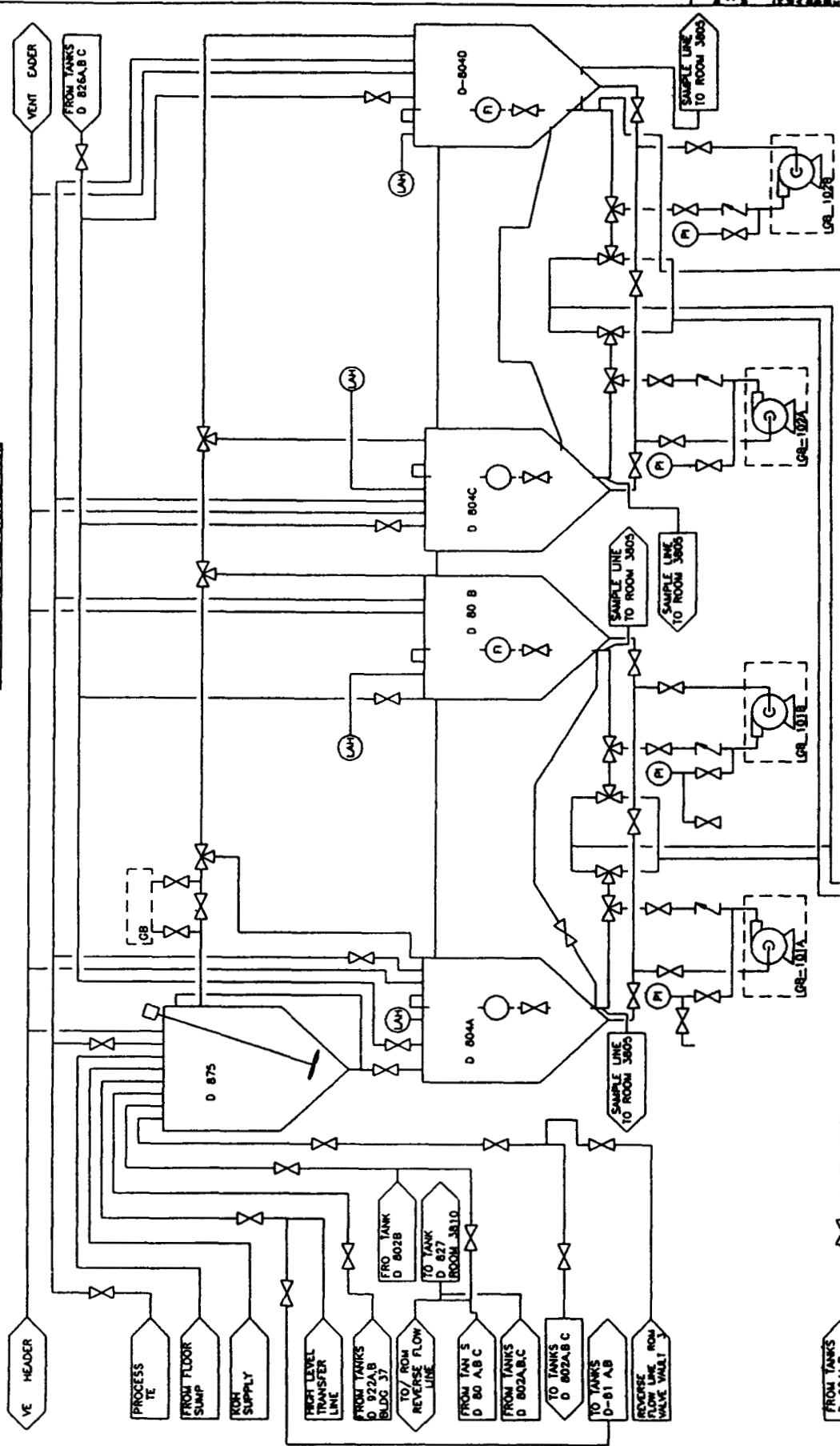
) EQUIPMENT AND MATERIAL SHOWN IN ARROW BOXES ARE NOT CONSIDERED PART OF THE REGULATED UNIT

- | ⑫ | S RA OTOR S PLACED IN BUC ET WITH DRA | EN NO IN |
|---|---------------------------------------|----------|
| | SE, ON TOP OF SPRA DRYER | |

[illegible]

272

D-804A, D-804B, D-804C, D-804D, D-875
2ND & 3RD STAGE FEED STORAGE TANKS



E-TWO		ORIGINAL ISSUE		DATE		BY		S. DE ARTIME OF ENERGY		ROOM PLATS AREA OFFICE		Risky Pla Plant		RISKY PLAT MODIFICATION		TANKS D-804A B C D		D-875		B 39650-2024 A	
DESIGNED	12/14/93	DESIGNED	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93
DRAWN	12/14/93	DRAWN	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93
CHECKED	12/14/93	CHECKED	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93
APPROVED	12/14/93	APPROVED	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93
SCALE	12/14/93	SCALE	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93
MASTER	12/14/93	MASTER	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93

NOTES

- EQUIPMENT AND MATERIAL SHOWN IN ARROW BOXES ARE NO CONSIDERED PART OF THE REGULATED UNIT
- DASHED LINES ON TANKS INDICATE EQUIPMENT BEHIND TANKS

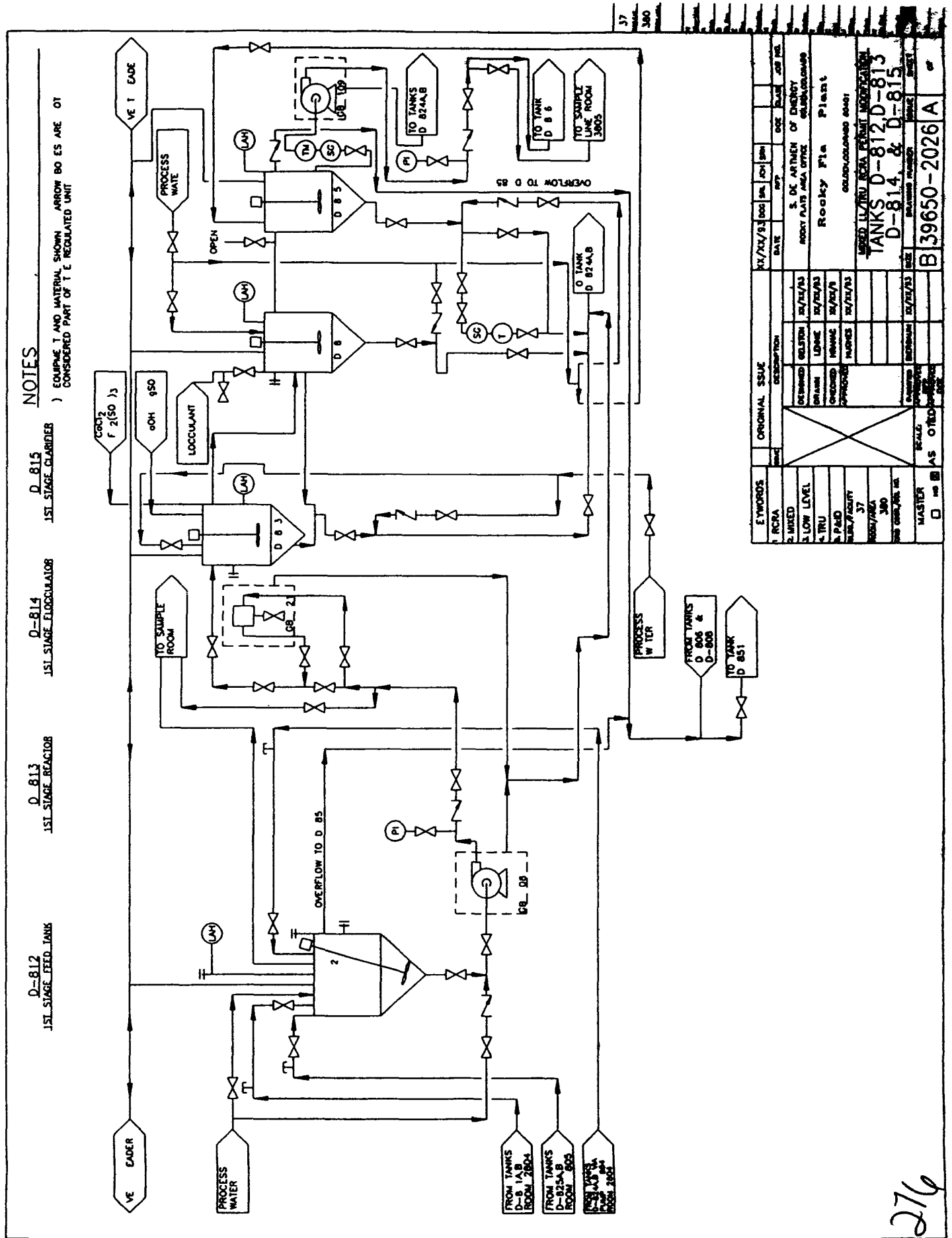
COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

III-226

V-83280

RFP RCRA Permit Mod. Request #14
Draft Mixed LL/TRU/ 3/1/93 REV 1

274



NOTES

EQUIPMENT AND MATERIAL SHOWN
CONSIDERED PART OF THE REGULATED UNIT

D-812
1ST STAGE REACTOR

D-814
1ST STAGE FLOCCULATOR

D-813
1ST STAGE REACTOR

D-815
1ST STAGE CLARIFIER

SYMBOLS	ORIGINAL ISSUE	DATE	BY	REV	DATE	BY	REV
1 RCRA	DESCRIPTION	DATE	BY	REV	DATE	BY	REV
2 MIXED	DESIGNED	12/14/93					
3 LOW LEVEL	DESIGNED	12/14/93					
4 TRU	DESIGNED	12/14/93					
5 P&ID	DESIGNED	12/14/93					
6 TANK/FACILITY	DESIGNED	12/14/93					
7 37	DESIGNED	12/14/93					
8 380	DESIGNED	12/14/93					
9 380	DESIGNED	12/14/93					
10 380	DESIGNED	12/14/93					
11 380	DESIGNED	12/14/93					
12 380	DESIGNED	12/14/93					
13 380	DESIGNED	12/14/93					
14 380	DESIGNED	12/14/93					
15 380	DESIGNED	12/14/93					
16 380	DESIGNED	12/14/93					
17 380	DESIGNED	12/14/93					
18 380	DESIGNED	12/14/93					
19 380	DESIGNED	12/14/93					
20 380	DESIGNED	12/14/93					
21 380	DESIGNED	12/14/93					
22 380	DESIGNED	12/14/93					
23 380	DESIGNED	12/14/93					
24 380	DESIGNED	12/14/93					
25 380	DESIGNED	12/14/93					
26 380	DESIGNED	12/14/93					
27 380	DESIGNED	12/14/93					
28 380	DESIGNED	12/14/93					
29 380	DESIGNED	12/14/93					
30 380	DESIGNED	12/14/93					
31 380	DESIGNED	12/14/93					
32 380	DESIGNED	12/14/93					
33 380	DESIGNED	12/14/93					
34 380	DESIGNED	12/14/93					
35 380	DESIGNED	12/14/93					
36 380	DESIGNED	12/14/93					
37 380	DESIGNED	12/14/93					
38 380	DESIGNED	12/14/93					
39 380	DESIGNED	12/14/93					
40 380	DESIGNED	12/14/93					
41 380	DESIGNED	12/14/93					
42 380	DESIGNED	12/14/93					
43 380	DESIGNED	12/14/93					
44 380	DESIGNED	12/14/93					
45 380	DESIGNED	12/14/93					
46 380	DESIGNED	12/14/93					
47 380	DESIGNED	12/14/93					
48 380	DESIGNED	12/14/93					
49 380	DESIGNED	12/14/93					
50 380	DESIGNED	12/14/93					
51 380	DESIGNED	12/14/93					
52 380	DESIGNED	12/14/93					
53 380	DESIGNED	12/14/93					
54 380	DESIGNED	12/14/93					
55 380	DESIGNED	12/14/93					
56 380	DESIGNED	12/14/93					
57 380	DESIGNED	12/14/93					
58 380	DESIGNED	12/14/93					
59 380	DESIGNED	12/14/93					
60 380	DESIGNED	12/14/93					
61 380	DESIGNED	12/14/93					
62 380	DESIGNED	12/14/93					
63 380	DESIGNED	12/14/93					
64 380	DESIGNED	12/14/93					
65 380	DESIGNED	12/14/93					
66 380	DESIGNED	12/14/93					
67 380	DESIGNED	12/14/93					
68 380	DESIGNED	12/14/93					
69 380	DESIGNED	12/14/93					
70 380	DESIGNED	12/14/93					
71 380	DESIGNED	12/14/93					
72 380	DESIGNED	12/14/93					
73 380	DESIGNED	12/14/93					
74 380	DESIGNED	12/14/93					
75 380	DESIGNED	12/14/93					
76 380	DESIGNED	12/14/93					
77 380	DESIGNED	12/14/93					
78 380	DESIGNED	12/14/93					
79 380	DESIGNED	12/14/93					
80 380	DESIGNED	12/14/93					
81 380	DESIGNED	12/14/93					
82 380	DESIGNED	12/14/93					
83 380	DESIGNED	12/14/93					
84 380	DESIGNED	12/14/93					
85 380	DESIGNED	12/14/93					
86 380	DESIGNED	12/14/93					
87 380	DESIGNED	12/14/93					
88 380	DESIGNED	12/14/93					
89 380	DESIGNED	12/14/93					
90 380	DESIGNED	12/14/93					
91 380	DESIGNED	12/14/93					
92 380	DESIGNED	12/14/93					
93 380	DESIGNED	12/14/93					
94 380	DESIGNED	12/14/93					
95 380	DESIGNED	12/14/93					
96 380	DESIGNED	12/14/93					
97 380	DESIGNED	12/14/93					
98 380	DESIGNED	12/14/93					
99 380	DESIGNED	12/14/93					
100 380	DESIGNED	12/14/93					

COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

III-228

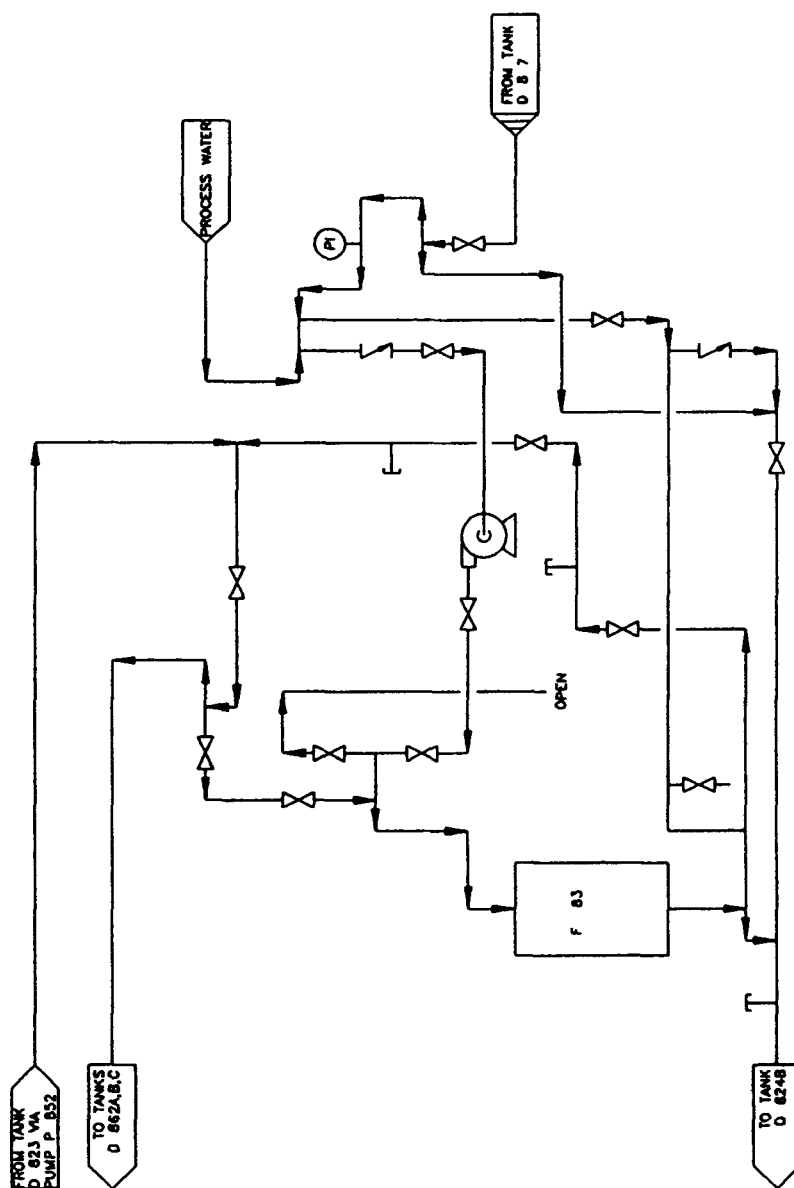
V-285285

RFP RCRA Permit Mod Request #14
Draft Mixed LL/TRU/ 3/1/98 REV. 1

276

NOTES

1) EQUIPMENT AND MATERIAL SHOWN IN ARROW BOXES ARE NO
CONSIDERED PART OF THE REGULATED UNIT

[illegible]

279

COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

RFP RCRA Permit Mod. Request #14
Draft Mixed LL/TRU/ 3/1/93 REV 1

~~III-231~~

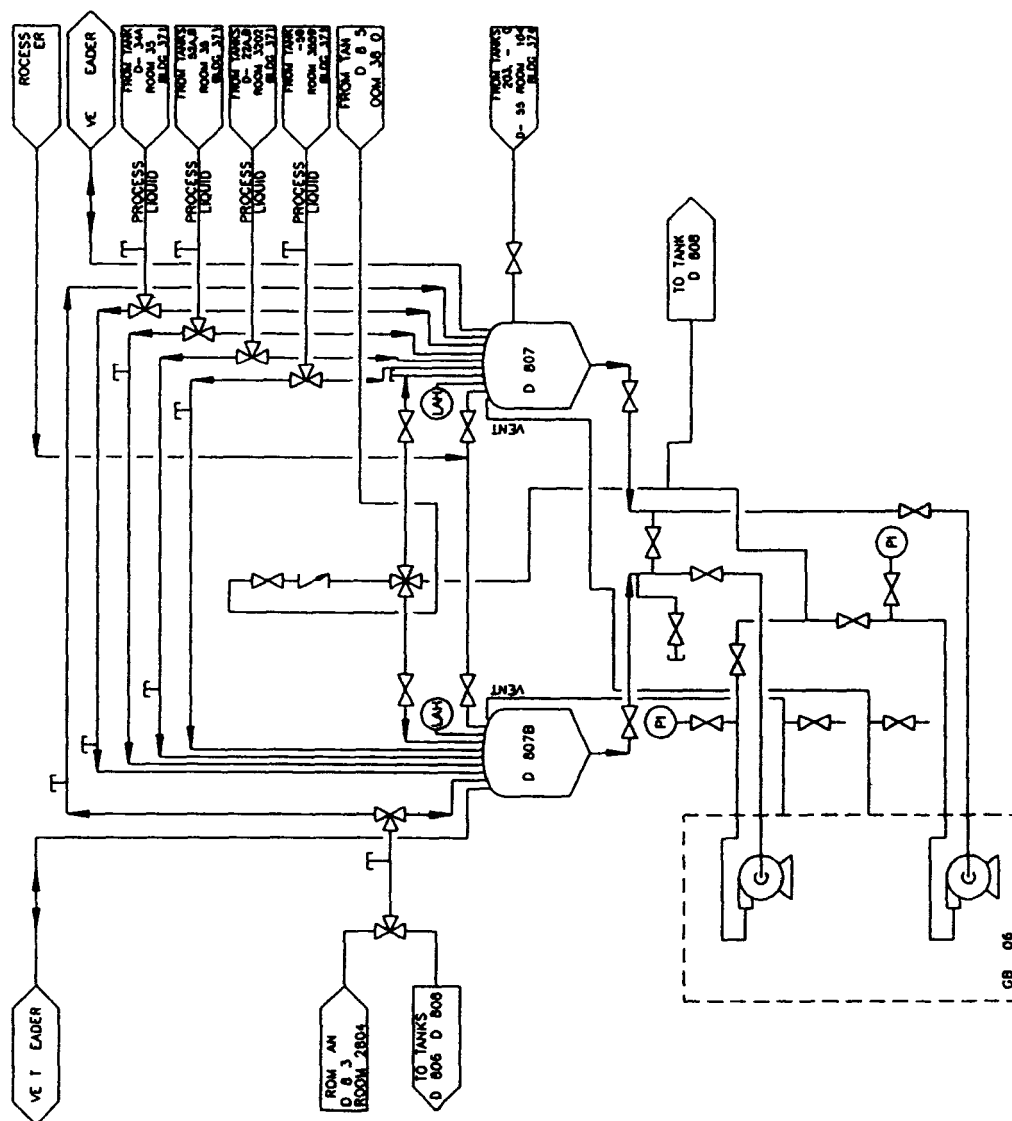
V-88284



V-~~89~~284

NOTES

- 1) EQUIPMENT AND MATERIAL SHOWN IN ABOVE ARE NO
CONSIDERED PART OF THE REGULATED UNIT
- 2) TANKS D 364, D 524, B AND D 59 ARE NC USED THE TULING
37 ACTA CLOSURE PLAN
- 3) TANKS D 224, B WERE NEVER OPERATIONAL
ALAR S O CON OL ANEL CONOM 8

[illegible]

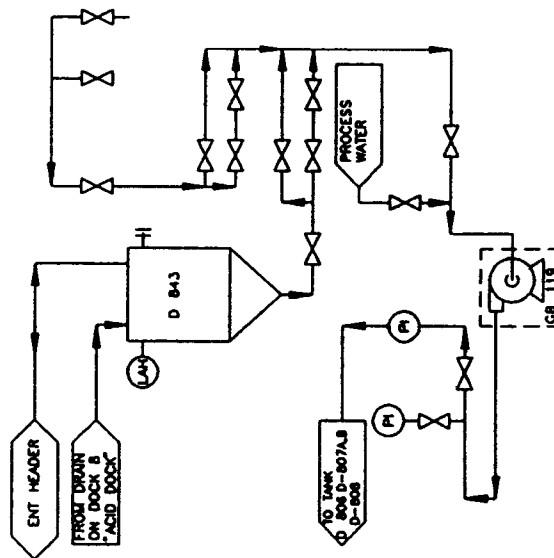
11) EQUIPMENT AND MATERIAL SHOWN IN ARROW BOXES ARE NOT CONSIDERED PART OF THE REGULATED UNIT



V-9428W

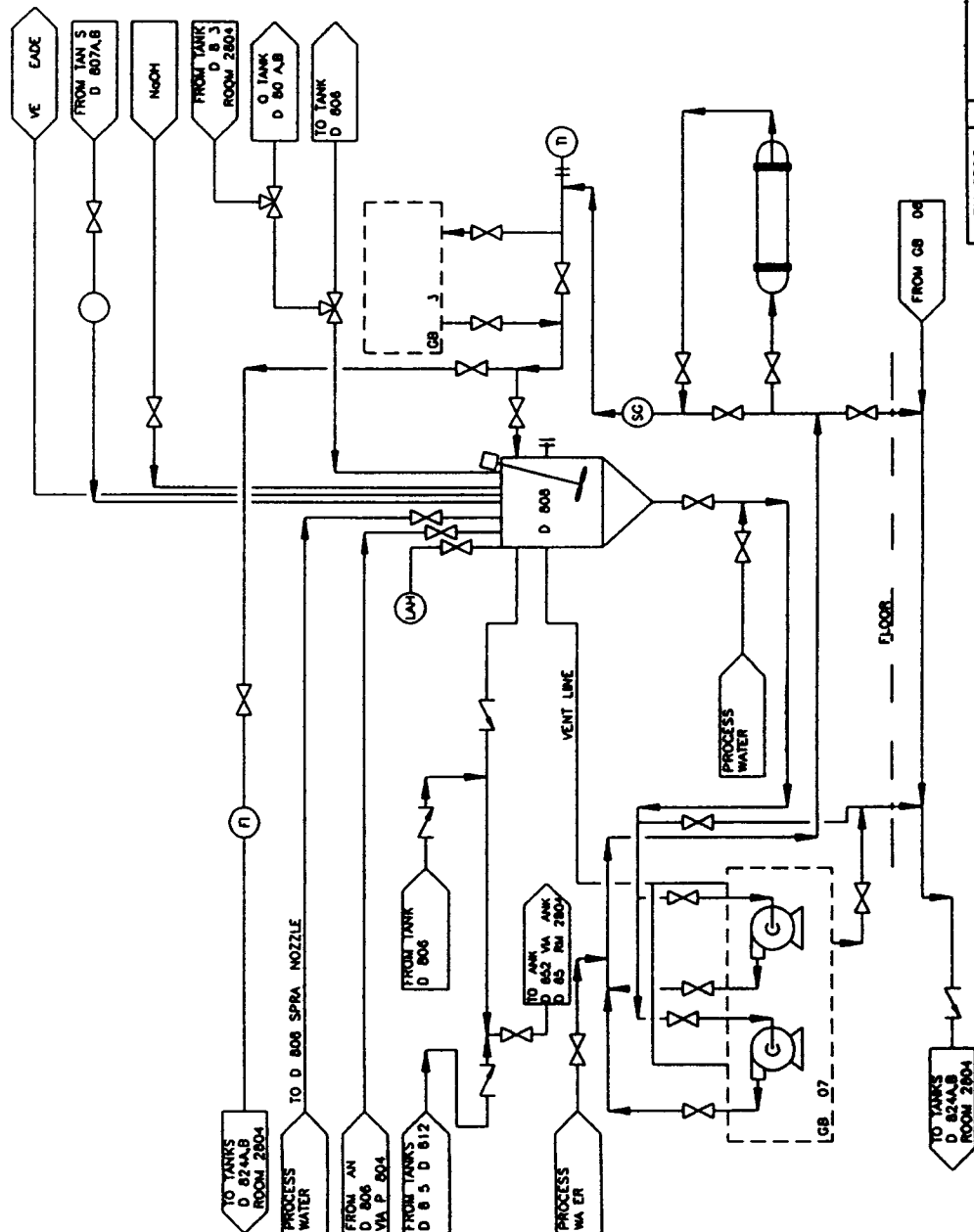
NOTES

) EQUIPMENT AND MATERIAL SHOWN IN ARROW BOXES ARE NOT CONSIDERED PART OF THE REGULATED UNIT

[illegible]

D 808
NITRALE WASTE NEUTRA

) EQUIPMENT AND MATERIAL SHOWN ARRO BO ES ARE NOT
CONSIDERED PART OF THE REGULATED UNIT

[illegible]

782

COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

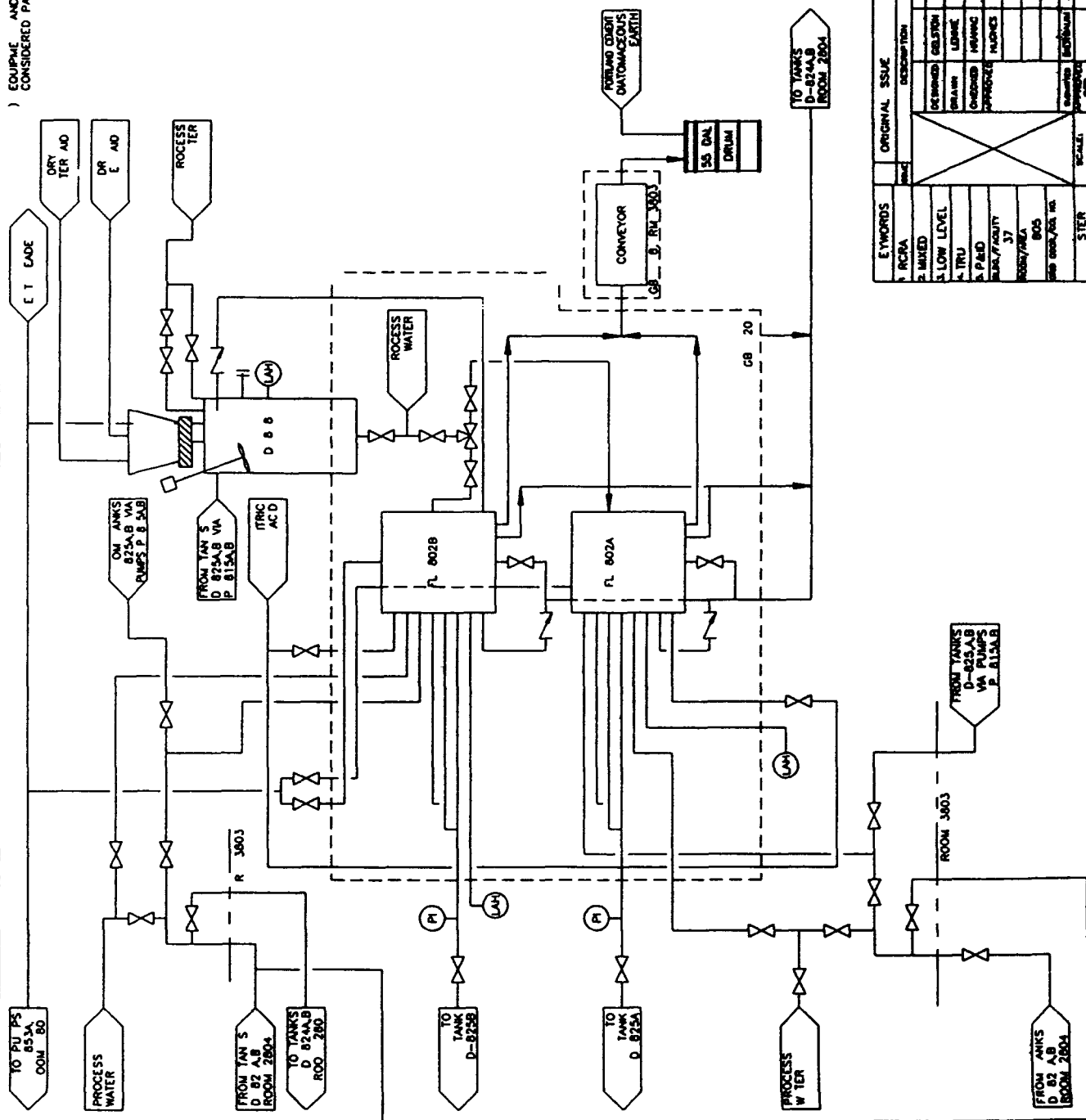
~~III-236~~

V-93284

RFP RCRA Permit Mod. Request #14
Draft Mixed LL/TRU/ 3/1/93 REV 1

FL 802A, FL 802B
ROTARY DRUM VACUUM FILTERS

3) EQUIPMENT AND MATERIAL SHOWN ABOVE ARE NOT
CONSIDERED PART OF THE REGULATED UNIT

[illegible]

COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

~~HH-238~~

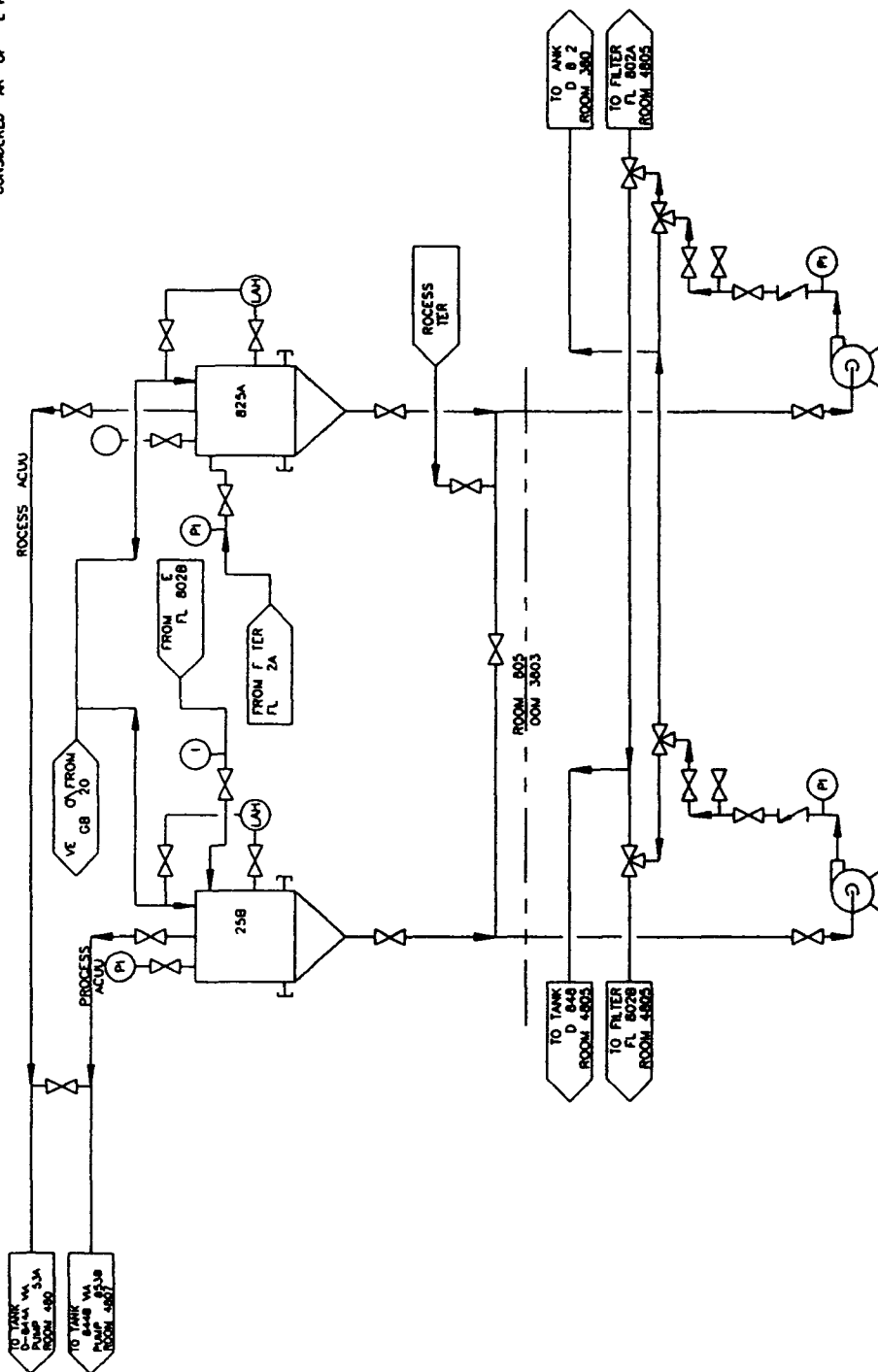
V-9528aa

RFP RCRA Permit Mod. Request #14
Draft Mixed IL/TRU 3/1/83 Rev 1

286

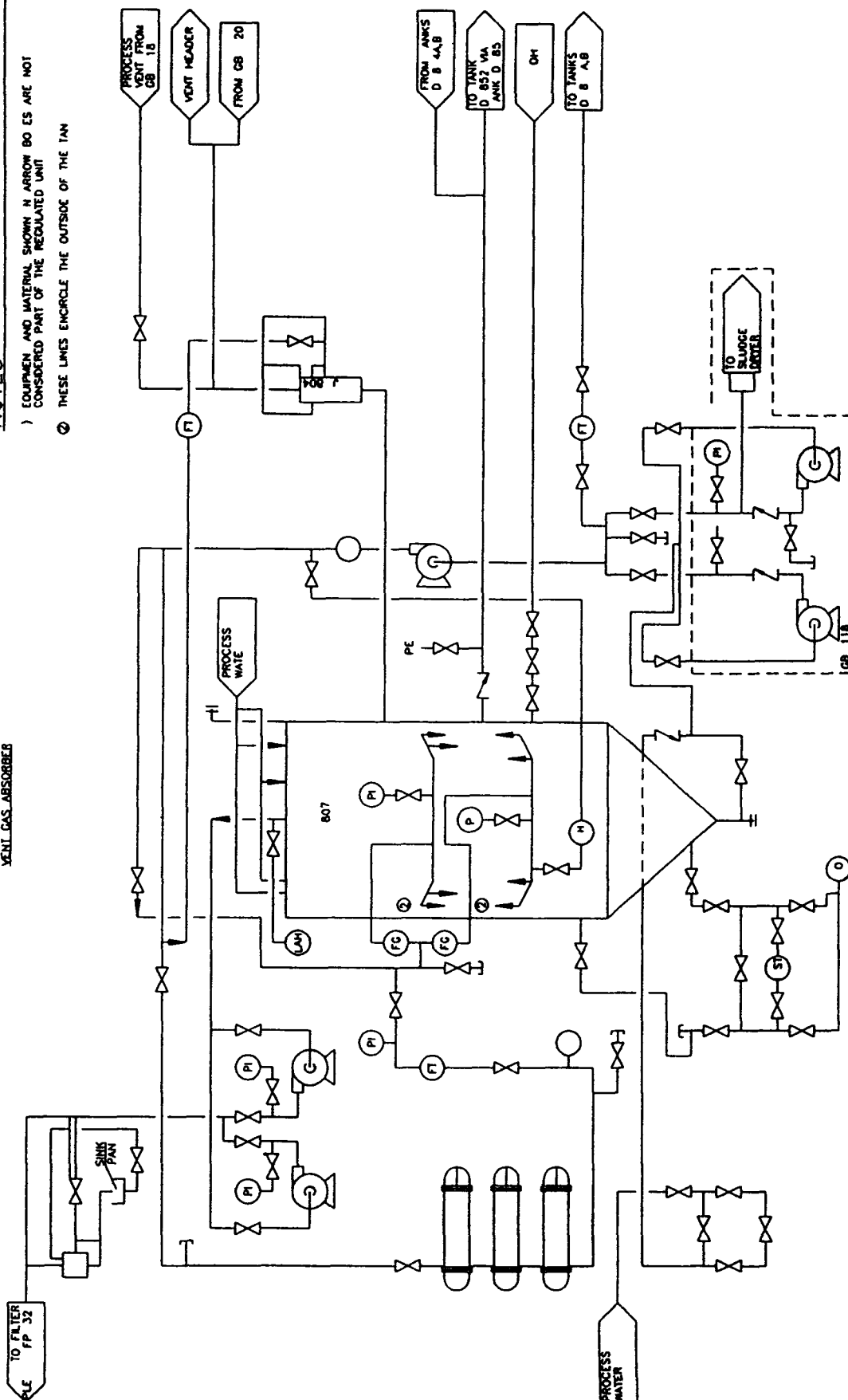
D-825A, D 825B
FILTER EFFLUENT TANKS

1) EQUIPMENT 1 AND MATERIAL SHOWN ARROW BOXES ARE NO CONSIDERED PART OF THE REGULATED UNIT

[illegible]

NOTES

- ② THESE LINES ENCLOSE THE OUTSIDE OF THE TAN

[illegible]

88

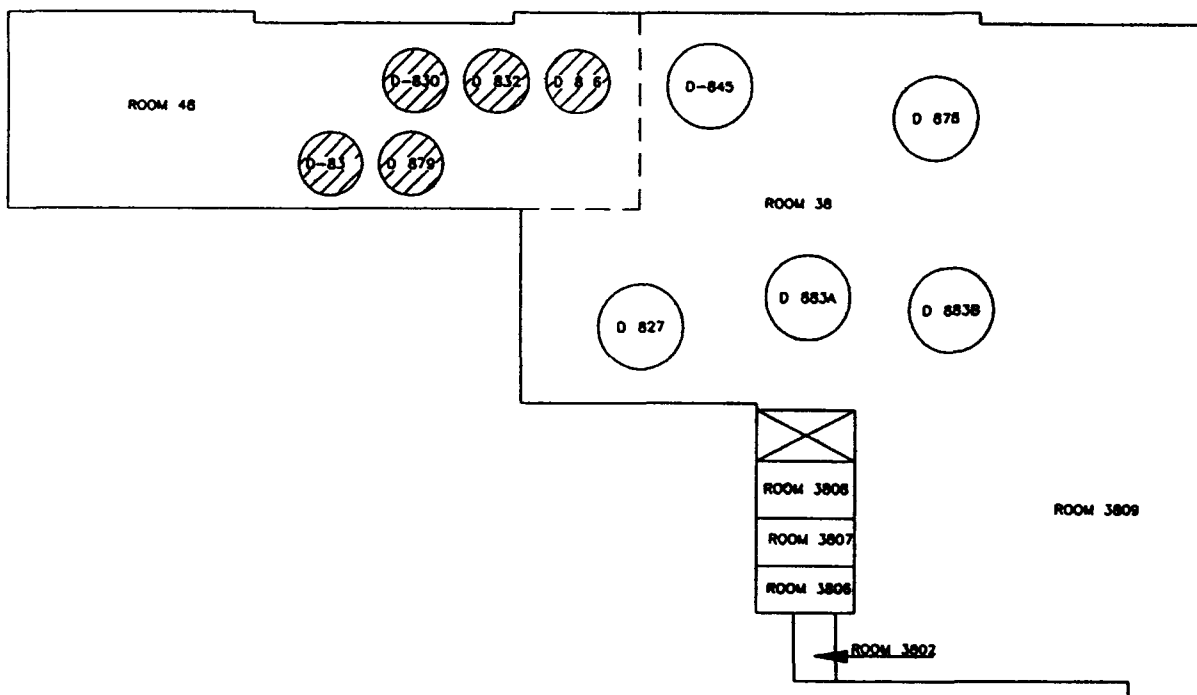
COMPUTER-GENERATED NO MANUAL CHANGES ALLOWED

RFP RCRA Permit Modification Request # 14
Draft Mixed LL/TRU 3/1/93 Rev 1

~~III-240~~

V-9728cc

- 1) HATCHING INDICATES TANKS THAT ARE ON THE MEZZANINE LEVEL.
- 2) FLOOR DRAINS IN ROOMS 3809 AND 38 0 DRAIN TO TANK D-852 IN ROOM 2804



1) VOLUME OF LARGEST TANK (Vt)	8000	gal
2) FLOOR AREA (Af)	5393	f
3) AREA OF OBSTRUCTIONS (Ao)	0	f
4) NET AREA (A) (An)=(Af)-(Ao)	5393	f
5) MINIMUM BERM (Hb)	2	4
(Hb) ((Vt)/(An)	7.48 gal / f)	X 12 in/ft

V-98 28dd

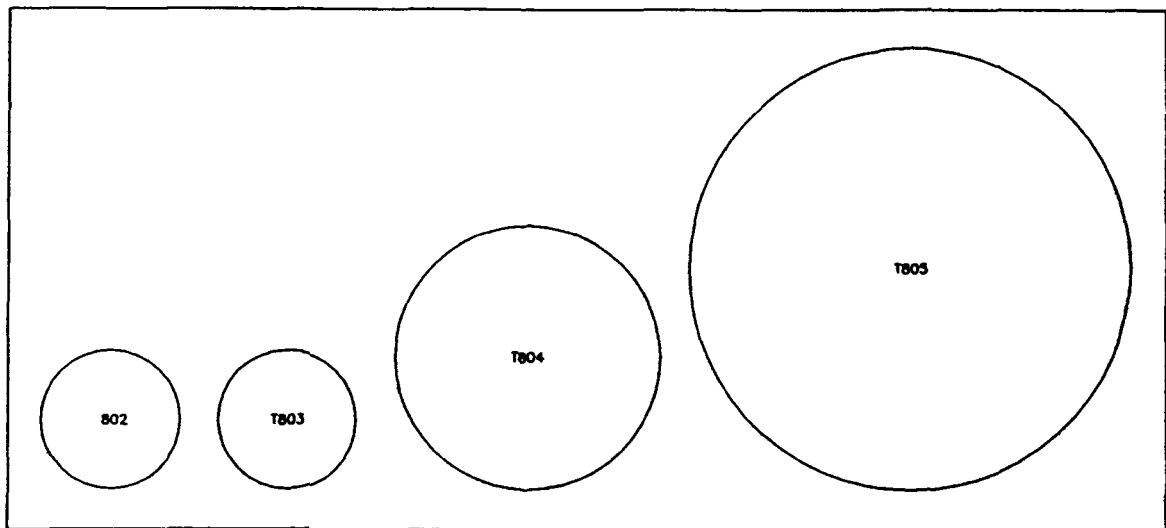
KEYWORDS	A	ORIGINAL ISSUE	XX/XX/83	BOS	SQL	JOY	SHI				
RCRA	TRAC	DESCRIPTION	DATE	APP	BOX	PLAS	JOB NO.				
MIXED	X	DESIGNED	GELSTON	XX/XX/83	2. DEPARTMENT OF ENERGY ROCKY PLATE AREA OFFICE GOLDEN,COLORADO						
LOW LEVEL		DRAWN	LEDSNE	XX/XX/83	Rocky Fla Plan						
TRU		CHECKED	HENHAC	XX/XX/83	GOLDEN,COLORADO 8040						
SECOND CONTAIN		APPROVED	HUGHES	XX/XX/83	<u>MIXED LL/TRU RCRA PERMIT MODIFICATION</u>						
BLDG/FACILITY 37					ROOMS 3809/3810/4814						
ROOM/AREA MULTI		REVISION	DATE	SIZE	DRAWING NUMBER	ROOM	SHEET				
DRG COOL/COOL NO.											
MASTER	SCALE	APPROVED									
YES <input type="checkbox"/> NO <input type="checkbox"/>	NONE	DATE			B 39650-2310	A					

37
MULTI

281

NOTES

- 1) MINIMUM BERM HEIGHT INCLUDES 5 YEAR 2 HOUR STORM EVENT FOR PRECIPITATION FROM 25



SECONDARY CONTAINMENT CALCULATIONS

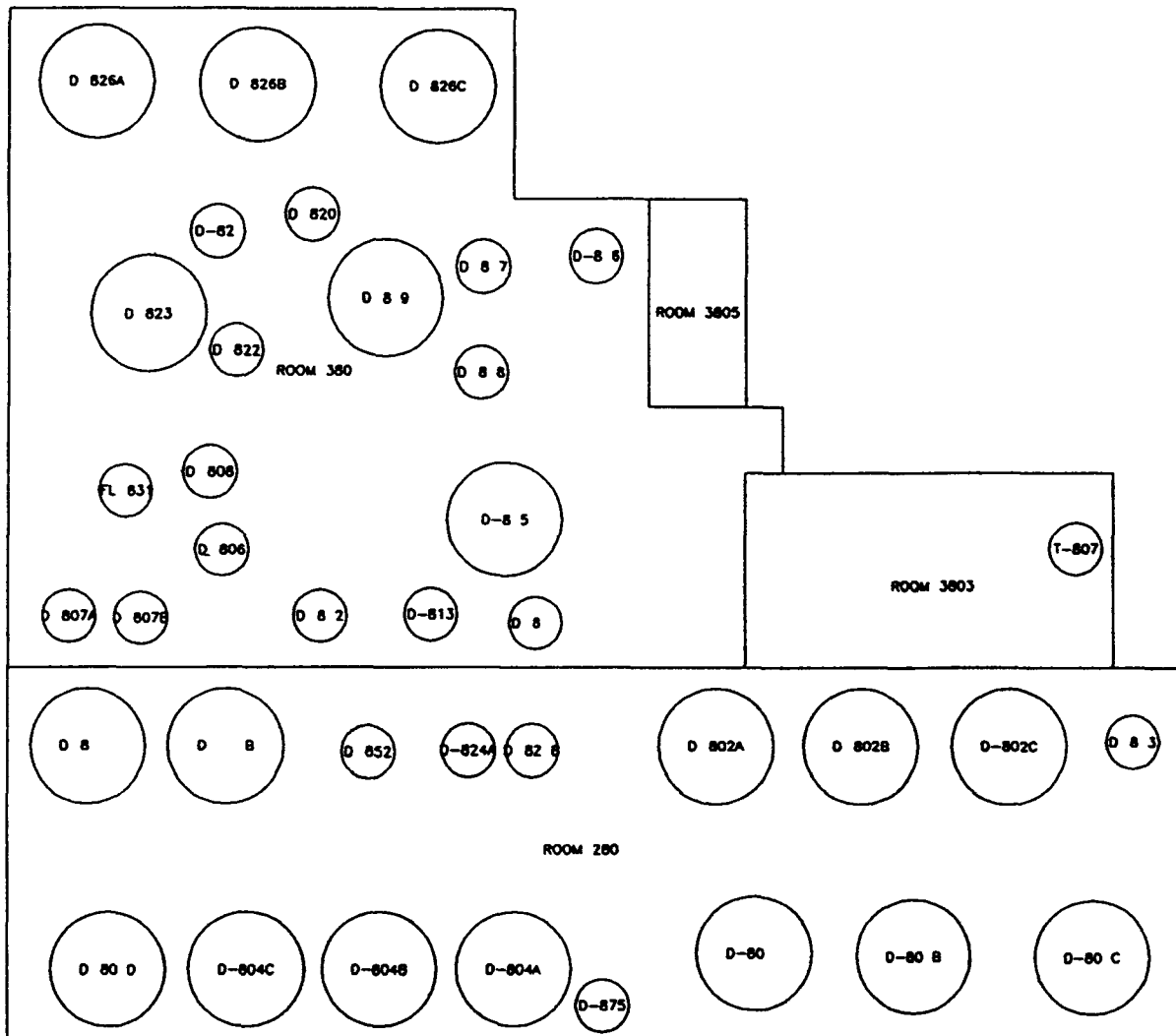
- 1) VOLUME OF LARGEST TANK (Vt) 33013 gal
- 2) FLOOR AREA (Af) 1680 sq ft
- 3) AREA OF OBSTRUCTIONS (Ao) 0 sq ft
- 4) NET AREA (A) (A) = (Af) - (Ao) 1680 sq ft
- 5) MINIMUM BERM (Hb)
(Hb) = (Vt) / ((A) * 7.48 gal./cf) 3.1 ft

V-9928ee

KEYWORDS	A	ORIGINAL ISSUE	12/12/83	DOE	ORL	JOH	SRH			
RCRA	100	DESCRIPTION	DATE	DOE	ORL	JOH	SRH			
2. MIXED		DESIGNED	COLSTON	12/12/83	U.S. DEPARTMENT OF ENERGY					
3. LOW LEVEL		DRAWN	LEWNE	12/12/83	ROCKY PLATE AREA OFFICE					
4. TRU		CHECKED	HANAC	12/12/83	Rocky Fls Plant					
5. SCOD CONTAIN		APPROVED	HUGHES	12/12/83	GOLDEN/COLORADO 60401					
BLDG/FACILITY					MIXED LL/TRU RCRA PERMIT MODIFICATION					
ROOM/AREA					OUTSIDE BLDG 374					
37										
OUTSIDE										
BLDG/FACILITY										
MASTER		SCALE	NONE							
YES <input type="checkbox"/>										
					B 39650-2311 A					

374
OUT

- 1) FLOOR DRAINS IN ROOMS 380 AND 3803 DRAIN TO TANK D-852 ROOM 2804
- 2) ROOM 2804 PROVIDES SECONDARY CONTAINMENT FOR ROOMS 3801 3803, 3805 AND THE TANKS IN ROOM 2804
- 3) BERM HEIGHT IS BASED ON THE FLOOR AREA OF ROOM 2804 ONLY



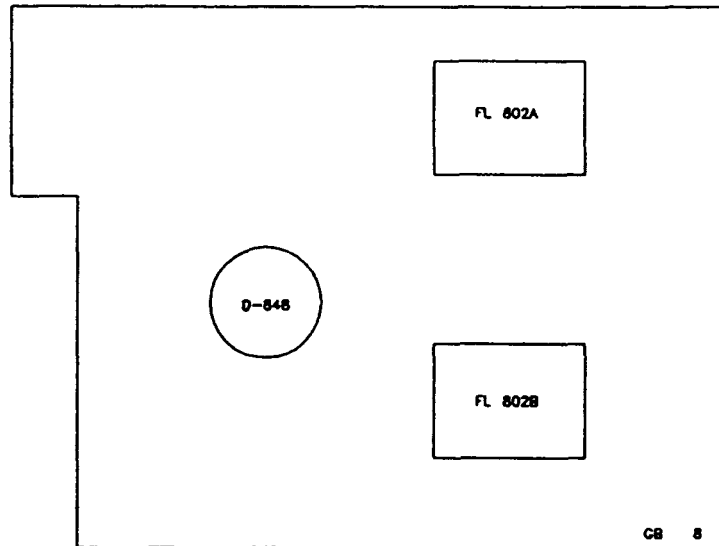
1) VOLUME OF LARGEST TANK (Vt)	33 000	gal
2) FLOOR AREA (Af)	5 040	f
3) AREA OF OBSTRUCTIONS (Ao)	0	f
4) NET AREA (A) (An)=(Af)-(Ao)	5 040	f
5) MINIMUM BERM (Hb)	10 6	in
(Hb)=(Vt)/(An	7 48 gal / f)	X 12 in/ft

V-10028 ff

KEYWORDS	A.	ORIGINAL ISSUE	XX/XX/83	DOC	SRL	JCH	SPR				
RCRA	HW	DESCRIPTION	DATE	DOC	SWP		DOC	CLASS	JOB NO.		
A. MIXED		DESIGNED	GELSTON	XX/XX/83	U.S. DEPARTMENT OF ENERGY						
A. LOW LEVEL					ROCKY PLATS AREA OFFICE GOLDEN/COLORADO						
A. TRU		GRAVIN	LEWNE	XX/XX/83	Rocky Flats Plan						
A. SCOND CONTAIN		CHECKED	MINIAC	XX/XX/83	GOLDEN/COLORADO 8040						
BLDG/FACILITY		APPROVED	HUGHES	XX/XX/83	MIXED LL/TRU RCRA PERMIT MODIFICATION						
37					ROOMS 3801/2804						
ROOM/AREA											
380 /2804											
DRG CORR./REV											
MASTER	SCALE	DATE	XX/XX/83	DOC	DRAWING NUMBER		ISSUE	SHEET			
YES <input type="checkbox"/> NO <input type="checkbox"/>	NONE				B 39650-2312 A						

NOTES

) DRAIN IN FLOOR OF GLOVEBOX DRAINS TO TANK D-832 IN ROOM 2804



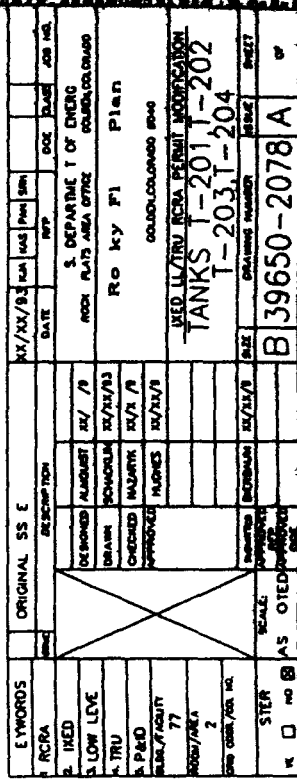
SECONDARY CONTAINMENT CALCULATIONS

- 1) VOLUME OF LARGEST TANK (Vt) 340 gal
- 2) FLOOR AREA (Af) 254 f
- 3) AREA OF OBSTRUCTIONS (Ao) 0 f
- 4) NET AREA (A) (A)=(Af)-(Ao) 254 f
- 5) MINIMUM BERM (Hb) 2.2 in
 $(Hb)=((Vt)/((An) \times 7.48 \text{ gal / f}) \times 12 \text{ in / ft})$

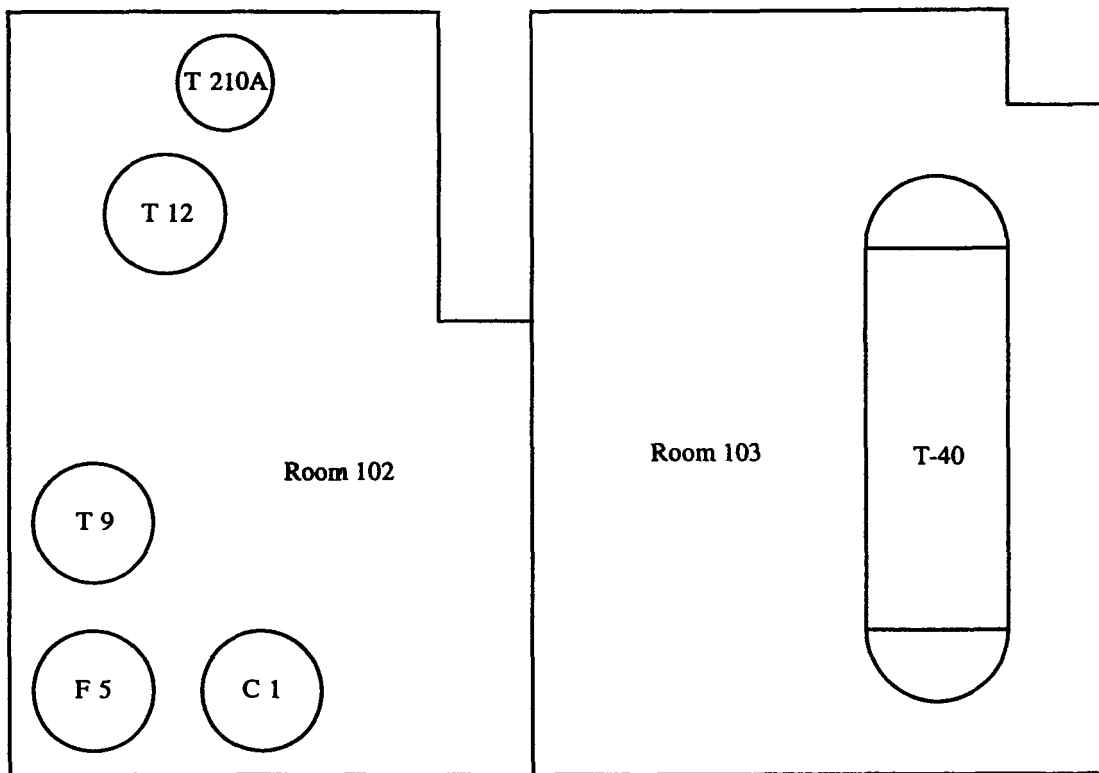
IV - 1012899

KEYWORDS	A	ORIGINAL ISSUE	XX/XX/93	DOE	REL	JOY	SPH			
RCRA	ISSUE	DESCRIPTION	DATE	DOE	REL	JOY	SPH	DOE	CLAS	JOB NO.
2. MIXED		DESIGNED	GELSPON	XX/XX/93	U.S. DEPARTMENT OF ENERGY					
3. LOW LEVEL		DRAWN	LEWNE	XX/XX/93	ROCKY PLATE AREA OFFICE					
4. TRU		CHECKED	HANNING	XX/XX/93	Rocky Fls Plan					
5. SCND CONTAIN		APPROVED	HUGHES	XX/XX/93	COLORADO 8040					
BLDG/FACILITY	37				MIXED LL/TRU RCRA PERMIT MODIFICATION					
ROOM/AREA	3803/GB 8				ROOM 3803/GB-118					
DOE CODE/REL. NO.										
MASTER	SCALE									
NO. 3	NONE				B-39630-2313-A					

I 203 2ND STAGE BATCH PRECIPITATION



RCRA Unit 774 3B
Room 102 and 103

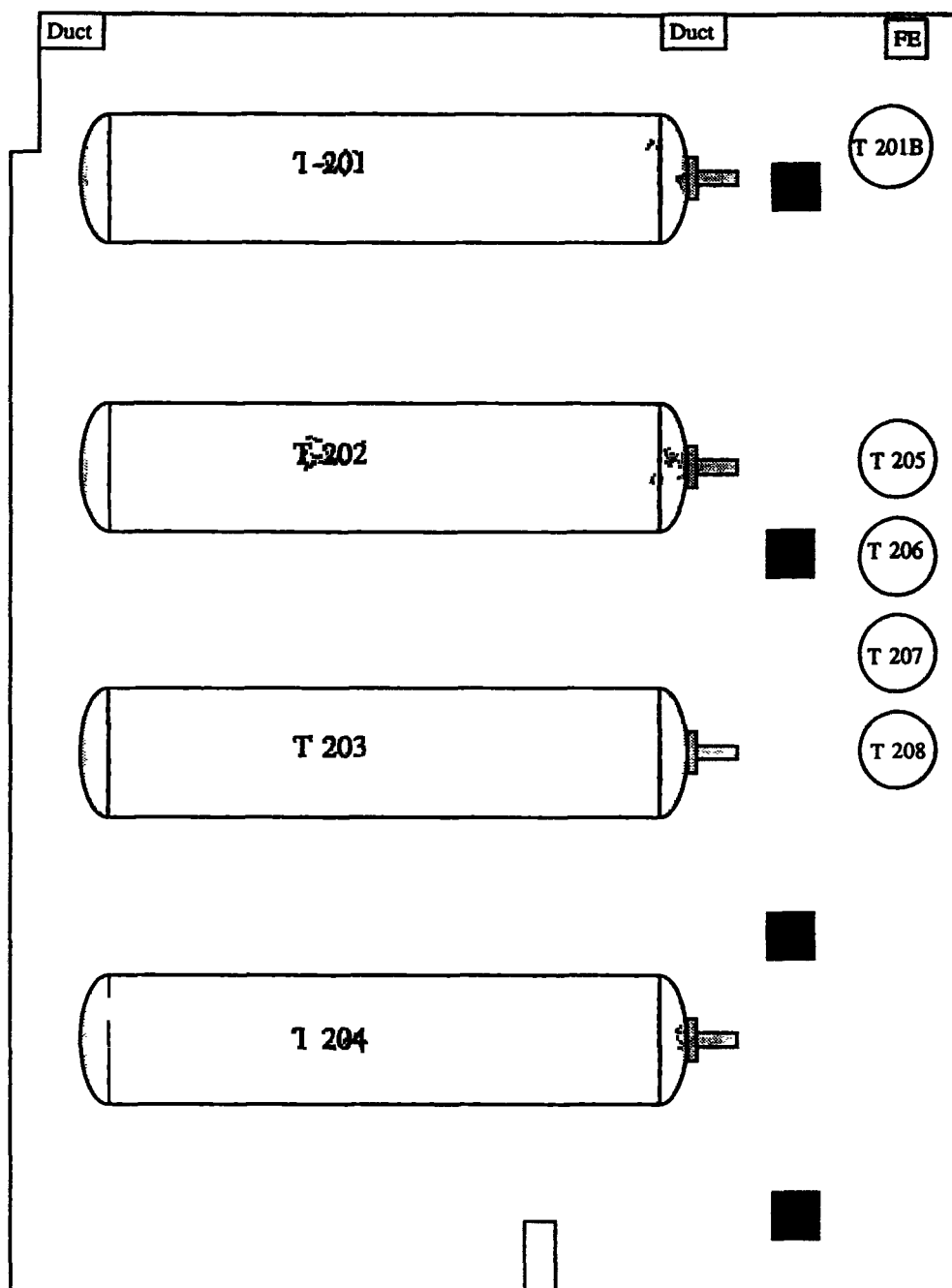


NOTE

- 1) Floor drains in rooms 102 and 103 drain to sump tank SP 202

294

v 328 44b



Legend

- Column
- FE Fire Extinguisher

Rocky Flats Environmental Technology Site
RCRA Unit 774, 23
Building 774, Room 241

295

V-32c 44c

5 Unit 776.3 Building 776

This RCRA treatment unit contains the Advanced Size Reduction Facility (ASRF). The ASRF is located in Room 134 of Building 776 and is used to size reduce, repackage, and wash various types of waste (both mixed and non mixed). Wastes subject to processing in the ASRF will be characterized as necessary in accordance with the Waste Analysis Plan (Part VI of this permit) and approved process procedures.

The ASRF is a structure within Building 776 equipped with heat ventilation air conditioning and exhaust systems that are independent of the building. Wastes subject to treatment in the ASRF are introduced into the facility and treated as necessary using any or all of the available treatment processes. Wastes may be steam cleaned or washed to remove external contamination prior to packaging, or size reduced by compacting, disassembling (either manually or remotely), or cutting using a plasma arc unit. Another form of treatment that occurs in the ASRF is liquid removal or solidification. These treatment processes include the addition of absorbents or cement to waste to remove or immobilize liquids. Wastes subject to treatment in the ASRF include contaminated solid wastes, gloveboxes, combustibles, high efficiency particulate air (HEPA) filters, machine tools, hazardous debris, processing equipment, plastic insulation, sludge, filter socks, blacktop, concrete, soil, and spill clean up materials such as wipes, booms, and oil dry.

Following treatment in the ASRF, wastes are packaged in appropriate waste containers. Waste liquids and solids resulting from the processes are either transferred for treatment in other facilities at the Site or packaged for storage and disposal.

TREATMENT PROCESS INFORMATION SHEET

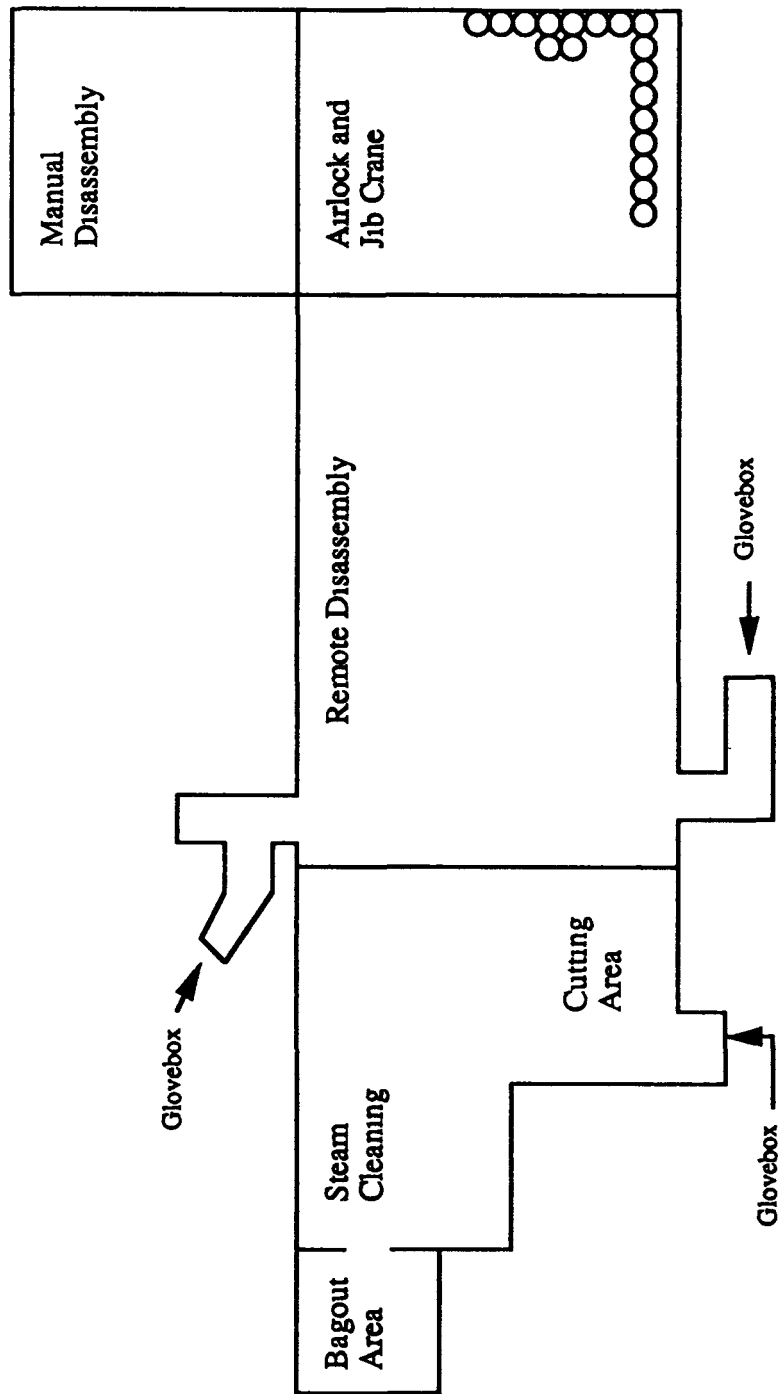
5 Unit 776.3 Advanced Size Reduction Facility

Location	Building 776 Room 134
Process Equipment	Gloveboxes steam cleaner plasma arc cutter jib crane remote manipulators
Treatment Process	(1) Size reduction (2) Chemical treatment using cleaning and washing equipment and processes and (3) Stabilization and Solidification using absorbants and cement
Design Capacity Treatment Process	25 cubic yards per week
Operating Capacity Treatment Process	Not applicable
Dimensions Treatment Process	40 feet wide x 100 feet long (approximately)
Waste Codes	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D018 D019 D028 D029 D035 D038 D039 D040 D043 F001 F002 F003 F005 F006 F007 F008 F009 P011 P012 P014 P015 P022 P028 P029 P030 P045 P062 P076 P087 P098 P101 P104 P105 P106 P113 P116 P119 P120 P121 U002 U003 U004 U019 U031 U037 U041 U042 U043 U044 U055 U056 U057 U067 U071 U074 U075 U077 U079 U080 U084 U098 U102 U107 U108 U112 U120 U121 U122 U123 U127 U131 U133 U134 U138 U144 U148 U151 U154 U158 U159 U161 U162 U165 U167 U169 U170 U188 U190 U191 U196 U201 U204 U207 U209 U210 U211 U213 U214 U215 U216 U217 U218 U219 U220 U225 U226 U227 U228 U236 U239 U246 U328 U353 U359
Waste Description	Mixed
Secondary Containment Type	
Treatment Process	Catch basins or stainless steel
Minimum Berm Height	
Treatment Process	Not applicable see Process specific Condition #2
Drawing Number	
Treatment Process	P&C 0006
Inspection Method	Visual
Process Control Variables	
Maximum	None
Minimum	None
Overfill Prevention	
Treatment Process	None

297
February 6 1997

V 46

**UNIT 776 3 ADVANCED SIZE REDUCTION FACILITY
ROOM 134, BUILDING 776**



NOTES

- 1) This drawing is not to scale and does not depict the actual location of equipment
- 2) The container layout shown is typical and may not depict the actual container arrangement.

V 4600

6 Unit 881.3 Building 881

This RCRA treatment unit includes two treatment processes Electrochemical Chlorination and Bench Scale Treatment of Hazardous Chemicals Both of the treatment units are discussed in the following

a Unit 881 3A Electrochemical Chlorination

The Electrochemical Chlorination treatment process is located in Room 245 of Building 881 and is used to treat reactive cyanide waste consisting of solutions and/or solids Wastes subject to treatment in this process are characterized by sampling and analysis conducted in accordance with the Waste Analysis Plan (Part VI of this permit) and approved process procedures Post treatment sampling and analysis is also conducted to ensure the treatment has been successful The electrochemical chlorination process is used to destroy the cyanide complex by generating chlorine

Specific pre treatment analyses include verification of the EPA hazardous waste code and waste type solubility and iron cyanide content. Post treatment analyses to be completed include pH/normality RCRA Toxicity Characteristic (TC) metals and total and amenable cyanide

Wastes which are to be treated in this process must be in liquid form If solid wastes require processing they must first be dissolved in an appropriate solvent. The solution is pumped from the reaction container to the flow through electrochemical cell which provides the initial reaction with electrical energy Chlorine gas results from this reaction and becomes the primary oxidizer for subsequent reactions In the next reaction, cyanide is converted into cyanate ions which are ultimately converted to carbon dioxide and nitrogen

Process equipment includes a 55 gallon reaction vessel with a mixer a recirculation pump a flow through electrochemical cell a fume hood used to capture fumes resulting from the processing and a fume scrubber For the protection of the process operators the treatment process is also equipped with various gas detection equipment

b Unit 881 3B Bench Scale Hazardous Waste Chemical Treatment

The Bench Scale Hazardous Waste Treatment Process includes five specific treatment processes including ultraviolet oxidation, hydrolysis cementation organic treatment and in situ treatment Wastes proposed for treatment include but are not limited to expired and off specification chemicals and laboratory reference standards and the wastes derived from treatment of those materials Wastes other than expired and off specification chemicals and reference standards may be treated in this unit, however prior to treatment the on duty chemist must develop additional pre and post treatment waste acceptance criteria for the specific wastes since they may contain constituents which could impair the effectiveness of treatment. The waste acceptance criteria developed will allow for the safe treatment of the waste to result in an acceptable post treatment waste form Additional waste acceptance criteria developed for unique wastes will be documented in the operating record for the treatment process

Excluding backlog excess chemicals once a hazardous waste chemical has been discovered the Permittee has 90 days to treat (if necessary) and transport the waste off site with the exception of waste rendered non hazardous as a result of treatment or which has been verified as radioactive If the total time necessary to transfer the waste off site will exceed 90 days the Permittee may request an extension from the Division prior to the expiration of the 90 days

Shock sensitive hazardous or mixed waste chemicals (i.e. chemicals capable of detonation or explosive reaction if subjected to a strong initiating source or if heated under confinement) will be destroyed, transferred off site or placed in isolated storage in Unit 993.1 within 14 calendar days of discovery. Verbal requests for extensions to the 14 calendar days requirement may be approved verbally by the Division.

For the treatment of reactive chemicals, the amount of waste treated during each run must be small enough to preclude violent or uncontrolled reactions. Additionally, the treatment must be conducted to prevent the generation of hydrogen gas in amounts sufficient to pose a fire or explosion hazard.

Wastes subject to treatment through this process will be evaluated by the on-duty chemist to ensure each waste is properly treated. The individual treatment processes that make up this treatment unit are capable of providing treatment options for nearly all of the excess waste chemicals and standards that have been previously identified at the Site. In some cases, waste chemicals may be subjected to more than one treatment process to result in an acceptable final waste form.

Except for in situ treatment, hazardous waste chemicals will be treated in Building 881, Room 267. In situ treatment will be performed at the location where the hazardous waste chemical is discovered or at an alternate location if deemed appropriate by Site personnel. The treatment processes in this unit may also be performed at alternate locations provided the Division is notified at least 7 days prior to the initiation of treatment at the alternate location.

Operation of the treatment processes within this unit will be supervised by the on-duty chemist. The on-duty chemist will have a minimum of a Bachelor of Science degree in chemistry and a minimum of 3 years practical experience in chemistry. All treatment, with the exception of in situ treatment, may be performed by trained, qualified personnel under the direct supervision of the on-duty chemist. In situ treatment will be performed only by the on-duty chemist meeting the minimum qualifications listed above. In situ treatment may only be performed by an on-duty chemist possessing a minimum of five years experience in organic chemistry, including direct experience stabilizing peroxide-forming chemicals/compounds.

The following provides a process-specific description of each of the treatment processes associated with this unit:

Ultraviolet (UV) Oxidation

The UV Oxidation treatment process is located in Room 267 in Building 881. UV oxidation uses hydrogen peroxide (H_2O_2) and UV light to destroy organic chemicals such as trichloroethane, tetrachloroethane, vinyl chloride, and aromatic compounds such as phenol, toluene, benzene, and xylene. Pre- and post-treatment evaluation and/or analysis will be conducted in accordance with process procedures. Pre-treatment analyses will be limited to solubility testing once the waste chemical has been determined to be a candidate for treatment based on approved waste codes for the UV oxidation process. Following treatment, the treated waste will be tested analytically to determine if applicable LDR disposal criteria have been met or a determination based on process knowledge will be made as to the LDR status of the treated waste. Additional analysis may be necessary to meet waste acceptance criteria for any subsequent treatment process(es); the waste will be subjected to

The UV oxidation process equipment is located on a portable cart that can be locked into position during treatment. Process equipment includes a 5 gallon holding tank, a static mixer, an immersion chiller, a flow meter, a UV chamber, and two pumps.

In the UV oxidation process, organic chemicals are dissolved in water and placed into a 5 gallon holding tank where hydrogen peroxide (H_2O_2) is added to the solution. The solution is then pumped out of the tank to the static mixer through the flow meter into the UV reaction chamber. Inside the UV chamber, hydroxyl radicals are generated through UV photolysis of the H_2O_2 . The hydroxyl radicals attack organic compounds and oxidize them. The solution is then returned to the holding tank. This process continues until the organic compounds are eventually destroyed. The treatment system is equipped with a UV meter to assist in determining when the reaction has been completed. The chemist conducting the treatment will control certain parameters (e.g., retention time, H_2O_2 dose, influent pH level, and solution temperature) during the treatment process to optimize treatment.

A containment structure is placed around the equipment on the cart during operation of the treatment process to capture any organic vapor emissions. Any vapors captured are vented to the Building 881 exhaust system. Because heat is liberated during the organic destruction process (exothermic reaction) and to prevent excessive loss of organic compounds through evaporation, the holding tank is cooled with an immersion chiller.

Following treatment, the resultant waste form is managed as a non-hazardous waste and disposed of appropriately or transferred for further treatment in on-site or off-site processes.

Hydrolysis

This process in Unit 881 3B is located in Fume hoods 4 and 5 in Room 267 of Building 881. Hydrolysis is a treatment process for waste chemicals that uses water to hydrolyze reactive metals and metal hydrides, oxides, sulfites, and carbides to result in stable, non-reactive compounds.

Pre-treatment screening of the waste chemicals proposed for treatment through the hydrolysis process will occur to ensure they are a water-reactive metal or compound and are authorized for treatment by the approved waste codes for the treatment process. Post-treatment analysis will be conducted if necessary to meet waste acceptance criteria for any subsequent treatment processes. The final waste form will be subjected to. This treatment process will be conducted in a fume hood in small laboratory containers (i.e., beakers or flasks) with a splash shield in place as required.

Reactive chemicals will be added to water in a controlled manner to minimize splattering of the chemicals. An exothermic reaction will occur as the reactive metal or compound reacts with the water, liberating heat and small amounts of hydrogen. The resulting liquid generated from the treatment process will be adjusted with an appropriate acidic or basic material to a pH between 2 and 12. Wastes resulting from the hydrolysis treatment process typically will be suitable for final treatment in the appropriate waste water treatment facility at the Site (either Building 374, Building 774, or Building 910).

Cementation

The cementation process in Unit 881 3B will occur in Fume hoods 4 and 5 in Room 267 of Building 881. The cementation process is used to immobilize hazardous waste chemicals or waste water derived from other treatment processes in Unit

881 3B Wastes to be treated can be liquid or solid however the best candidates for cementation are insoluble inorganic and organic salts metal fines metal powders and liquids that are basic and non reactive with cement Pre treatment analysis will be conducted to determine the pH if the waste is a liquid

Post treatment analysis will be conducted on a representative sample of the solidified waste form to ensure the waste meets LDR criteria for disposal In addition the waste will be evaluated to ensure proper solidification of the waste has occurred and no free liquids remain

The pH of liquid wastes will be adjusted if necessary to a minimum pH of 7 before cementation. The waste chemicals are mixed with cement and/or fly ash in a 5 liter mixer located in a fume hood at a predetermined ratio into a homogenous waste form Then the waste is poured from the mixer into a container and allowed to cure and solidify Following successful treatment, the final waste form will be managed as a non hazardous waste and disposed of properly

Organic Treatment

The Organic treatment process in Unit 881 3B is located in Fume hood 4 and 5 in Room 267 of Building 881 This treatment process uses controlled chemical reactions to break down organic waste chemicals (typically ignitable toxic or reactive organic compounds) to non toxic compounds such as carbon dioxide hydrogen and water Pre treatment evaluation of the candidate waste chemicals will be done to ensure that the chemical is amenable to the organic treatment process and is authorized for treatment based on the approved waste codes for the process Post treatment analysis will be conducted if necessary to meet waste acceptance criteria for any subsequent treatment processes the final waste form will be subjected to

Wastes are treated in batches of 5 liters or less in laboratory containers (i.e. flasks beakers etc) located in a fume hood Small quantities of waste chemicals are slowly added to the solvent to maintain control of the reaction In some cases the solvent will be diluted to further restrict the reaction. The waste chemical being treated will continue to be added to the solvent until all has been treated The solvent containing the waste chemical will then be allowed to complete the reaction before being removed to a bottle for further waste management activities

The resultant waste form will be transferred for additional treatment within this treatment unit or another at the Site or will be managed appropriately prior to treatment and or disposal at an off site facility

In Situ Treatment of Peroxides and Peroxide Forming Compounds

The in situ treatment process will be conducted in various locations around the Site on an as needed basis in accordance with specific operational requirements This process is used to destroy peroxides and peroxide forming organic compounds discovered in various locations around the Site by the addition of chemicals that reduce and inhibit the formation of peroxides Chemicals capable of detonation or explosive reaction if subjected to a strong initiating source or if heated under confinement may be introduced into this treatment process A pre treatment evaluation of the waste chemical will be conducted to ensure it is authorized for treatment based on the approved waste codes for the process Post treatment requirements for analysis will be dependent on the final disposition of the treated waste Applicable waste acceptance criteria for subsequent waste treatment processes or disposal will be met as necessary

Due to the unstable nature of peroxides treatment will be completed at or near the

location where the peroxide or peroxide forming compound is discovered or at an alternate location if deemed appropriate by authorized site personnel. Prior to the initiation of treatment operations a Job Safety Analysis (JSA) addressing any special hazards presented by the waste chemical to be treated, the treatment process, and precautions to be taken will be prepared.

All personnel associated with the treatment process will be made aware of the JSA and any special requirements or precautions it mandates. All treatment events will be conducted in accordance with the requirements identified in the JSA. At any time during the conduct of the treatment, the on-duty chemist or industrial hygienist may require additional PPE, modify the treatment processes, or add other precautionary measures to assure safe and effective treatment.

Peroxide forming compounds may vaporize at temperatures greater than 90° F and condense as unstable crystals (especially on the inside of a container lid). Opening these containers poses a risk of detonation. If any crystals are visually detected within a discovered container, personnel must stop operations in the area and notify their supervisor. Once the area has been isolated, Site personnel should immediately contact the Division to assist in determining appropriate management of the container. If deemed necessary, the Permittee shall request an emergency permit within 7 calendar days.

For containers without internal crystal formation, the container will be carefully inverted for at least 24 hours before opening to dissolve any peroxide crystals that may have formed under the cap or on the threads of the container. After the container is opened, an appropriate reducing agent (e.g., ferrous ammonium sulfate) will be added to the peroxide forming compound to reduce the concentration of peroxide.

Test strips used to detect the presence of peroxides will be used intermittently during the addition of the reducing agent until peroxides are no longer detected. More reducing agent and an appropriate inhibitor (e.g., 2,6-Di-tert-butyl-4-methylphenol) will then be added to minimize additional peroxide formation.

Treated chemicals will be removed from the treatment area and repackaged into the original container, if possible, in accordance with applicable waste packaging procedures.

The treated waste will be sent to the UV oxidation process in Building 881 for final destruction of peroxide forming organic compounds or packaged for off-site shipment for additional treatment and disposal.

TREATMENT PROCESS INFORMATION SHEET

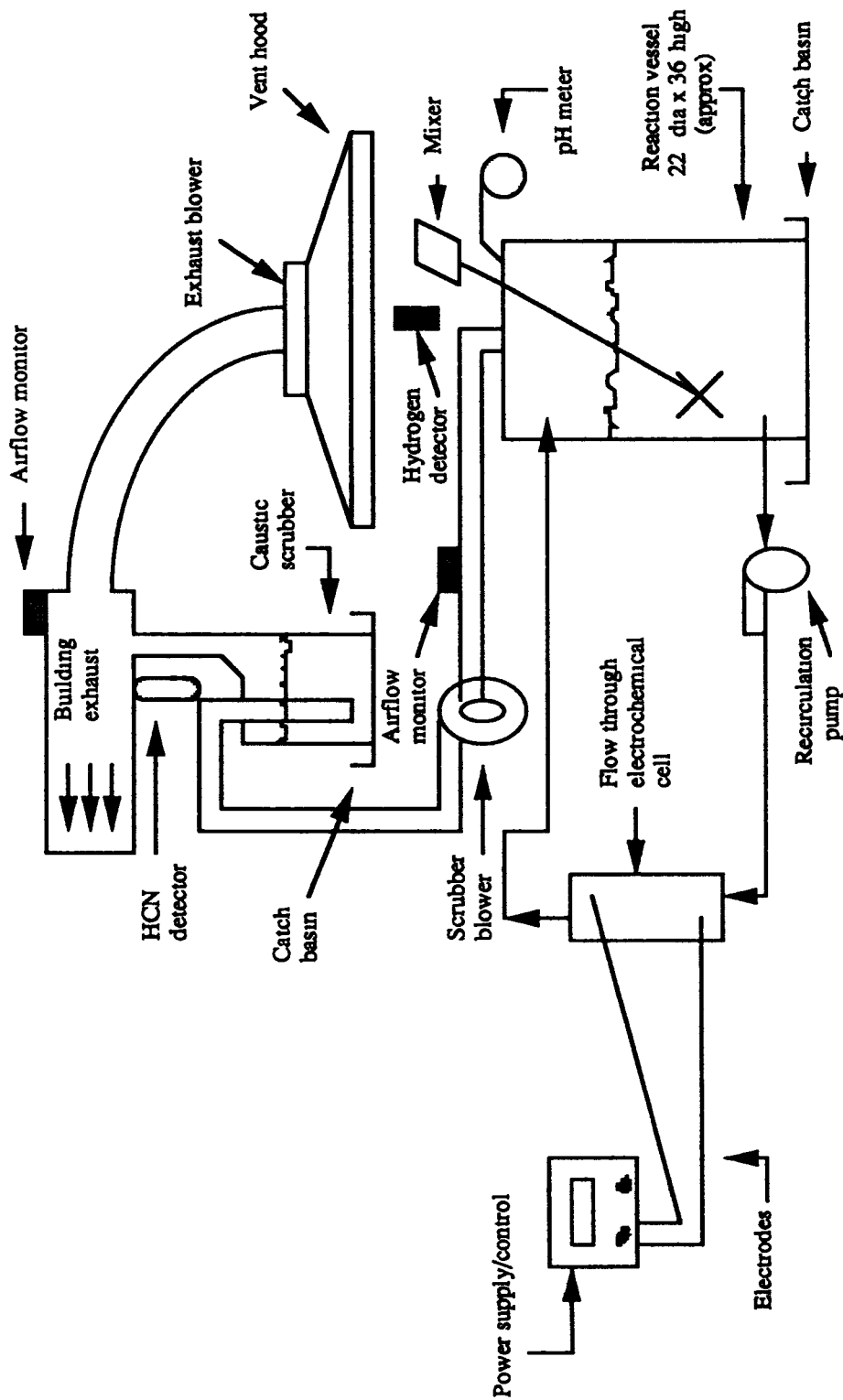
6a Unit 881.3A Electrochemical Chlorination

Location	Building 881 Room 245
Process Equipment	Reaction vessel recirculation pump electrochemical cell fume hood and fume scrubber
Treatment Process	Chemical treatment electrochemical chlorination cyanide destruction
Design Capacity Treatment Process	55 gallons
Operating Capacity Treatment Process	30 gallons (approximate) per batch
Dimensions Treatment Process	Approximately 18 feet x 11 feet
Waste Codes	D002 D003 D006 D008 D011 F007 P029 P031 P074 P098 P104 P106 P121
Waste Description	Mixed hazardous
Secondary Containment Type	
Treatment Process	Catch basin
Minimum Berm Height Treatment Process	Not Applicable see Process specific Condition #1
Drawing Number Treatment Process	42044 500
Inspection Method	Visual
Process Control Variables	pH concentration of salts
Maximum	Not Applicable
Minimum	pH for Scrubber >12 pH for Reaction vessel >10 Concentration of salts approximately 5% salt (weight) Electrical current approximately 40 amperes
Overfill Prevention Treatment Process	Direct monitoring
P&ID Drawing Number Treatment Process	42044 500

Process specific Conditions

- 1) The catch basin for the process must be capable of containing 100% of the waste present within the treatment process

RCRA Unit 881 3A ELECTROCHEMICAL CHLORINATION
BUILDING 881, ROOM 245



NOTES

- 1) Drawing is not to scale and may not depict the actual size or location of equipment

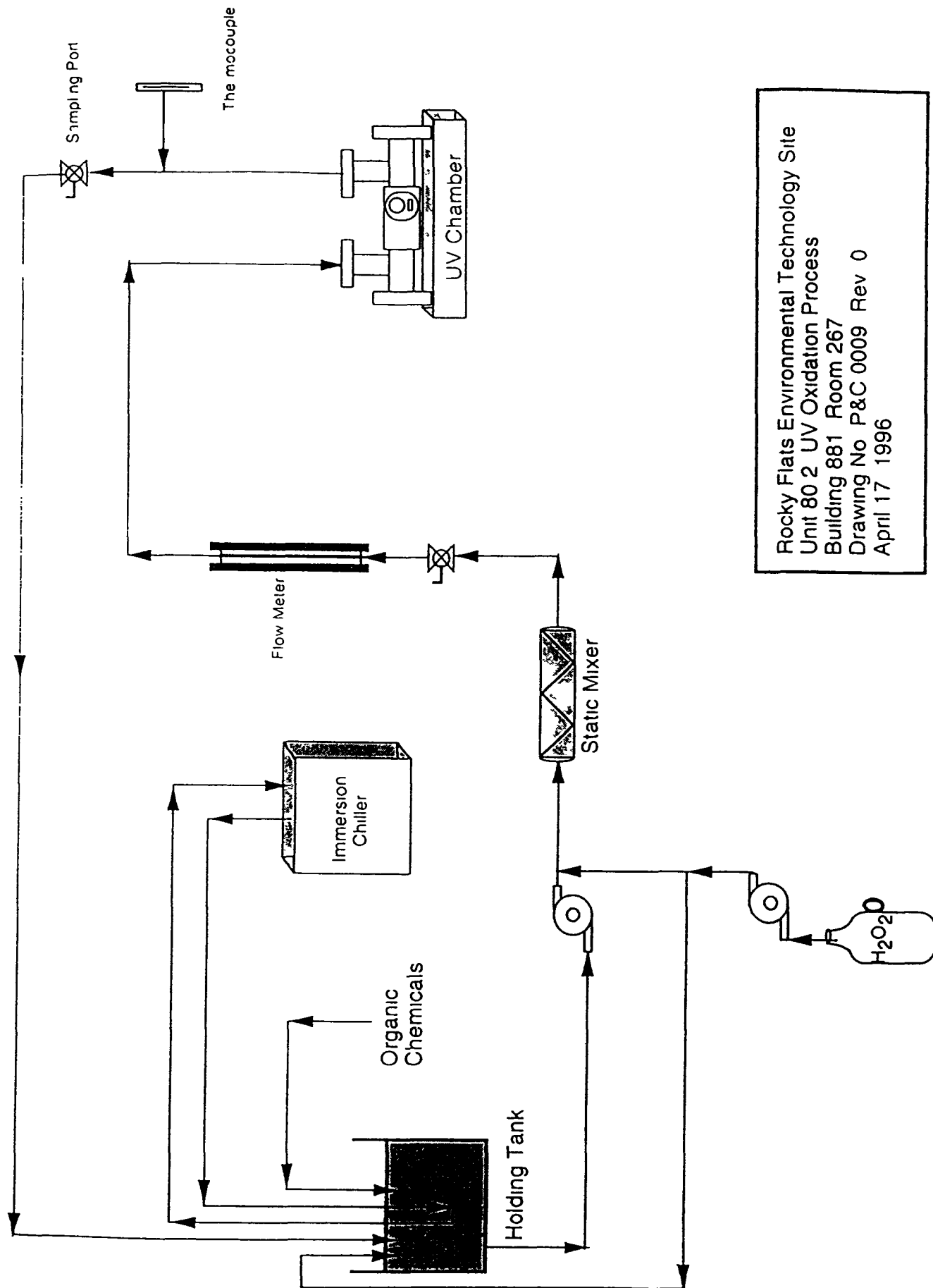
V 40a Sta 52a

TREATMENT PROCESS INFORMATION SHEET

6b Unit 881.3B Bench Scale Treatment of Hazardous Waste Chemicals

Location	Building 881 Room 267
Process Equipment	Holding tank immersion chiller UV chamber flow meter static mixer and pumps
Treatment Process	UV Oxidation
Design Capacity	
Treatment Process	1 liter per day
Operating Capacity	
Treatment Process	1 liter per day
Dimensions	
Treatment Process	Approximately 4 feet x 4 feet
Waste Codes	D001 D003 D022 D029 D035 P016 U002 U003 U009 U027 U031 U044 U077 U080 U108 U112 U113 U123 U154 U159 U161 U188
Waste Description	Mixed hazardous
Secondary Containment	
Type	
Treatment Process	Catch basin formed as part of portable cart base
Minimum Berm Height	
Treatment Process	Minimum volume to contain 100% of the waste being treated
Drawing Number	
Treatment Process	P&C 0008 and 0009
Inspection Method	Visual
Process Control Variables	
Maximum	<u>UV transmission UV lamp on or off</u>
Minimum	30 000 microwatt per cm ² N/A
Maximum	<u>Peroxide feed rate Peristaltic pump</u>
Minimum	20 milliliters per minute (or 30% by weight) N/A
Overfill Prevention	
Treatment Process	N/A
P&ID Drawing Number	
Treatment Unit	N/A
Special Unit Conditions	

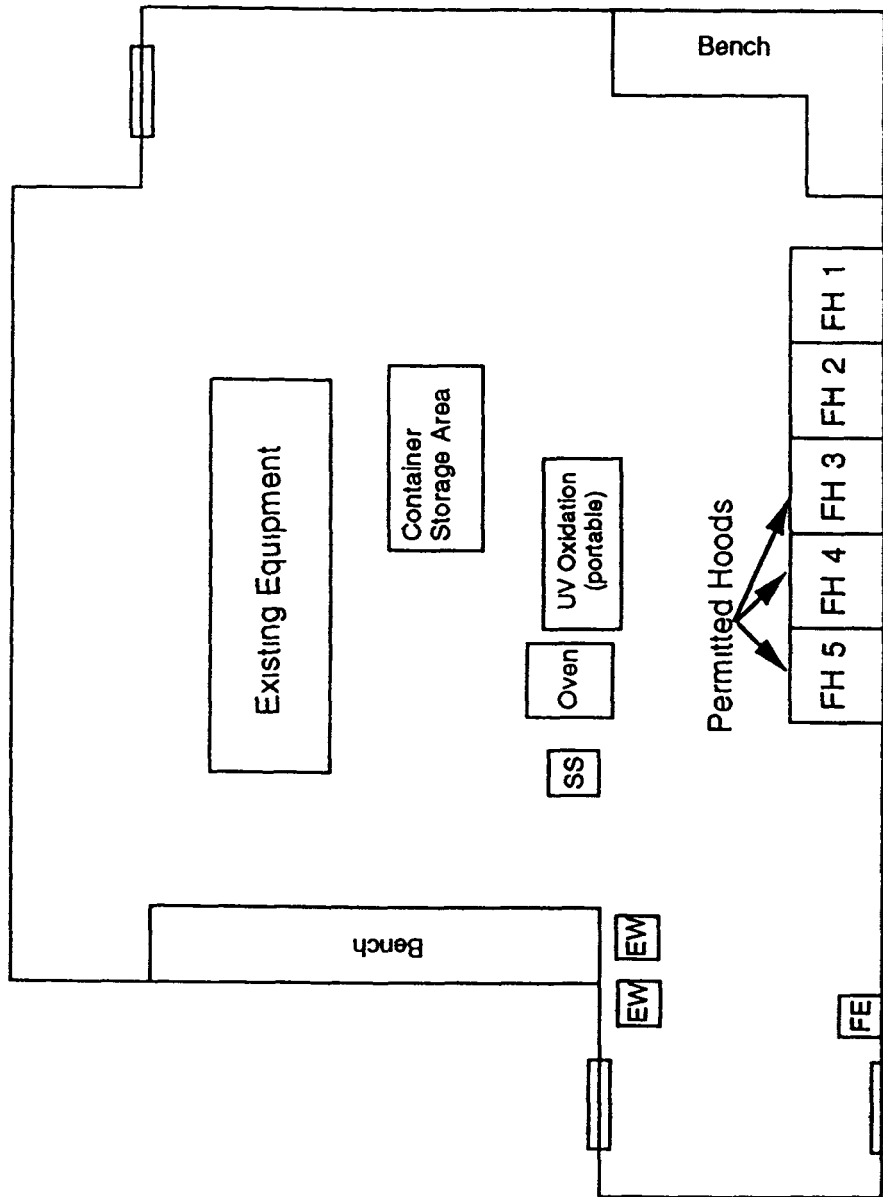
- 1) Staging of chemicals to be treated may occur in fume hood FH 3 for a period of up to 90 days Volume of the staging area is limited to the volume the hood can secondarily contain.
- 2) Retention time temperature waste influent percentage and concentration maximum will be identified in the operating record for each treated waste stream



Rocky Flats Environmental Technology Site
 Unit 80 2 UV Oxidation Process
 Building 881 Room 267
 Drawing No P&C 0009 Rev 0
 April 17 1996

V-53a

307



Note Containers may be stored up to the capacity of
six 55 gallon drums for EPA Waste Codes and Waste
Descriptions allowed in Units 80 1 and 80 2

Rocky Flats Environmental Technology Site
Unit 80 2 Layout Building 881 Room 267
Drawing No P&C 0008 Rev 0
April 17 1996

V-536

308

TREATMENT PROCESS INFORMATION SHEET

6b Unit 881.3B Bench Scale Treatment of Hazardous Waste Chemicals

Location	Building 881 Room 267 Fume hoods FH-4 and 5
Process Equipment	
Treatment Process	Hydrolysis
Design Capacity	
Treatment Process	5 liters per day
Operating Capacity	
Treatment Process	5 liters per day
Dimensions	
Treatment Process	Approximately 3 feet x 4 feet
Waste Codes	D001 D003 D005
Waste Description	Mixed hazardous
Secondary Containment	
Type	
Treatment Process	Steel or plastic catch basin
Minimum Berm Height	
Treatment Process	Minimum volume to contain 100% of the waste being treated
Drawing Number	
Treatment Process	
Inspection Method	Visual
Process Control Variables	Temperature treatment will continue until no additional rise in temperature occurs in the solution
Maximum	pH 12
Minimum	pH 2
Overfill Prevention	
Treatment Process	N/A
P&ID Drawing Number	
Treatment Unit	N/A
Special Unit Conditions	
1)	Personal splash protection will be used at all times during operation of the treatment process

TREATMENT PROCESS INFORMATION SHEET

6b Unit 881.3B Bench Scale Treatment of Hazardous Waste Chemicals

Location	Building 881 Room 267 Fume hoods FH-4 and 5
Process Equipment	
Treatment Process	Cementation
Design Capacity	
Treatment Process	25 liters per day
Operating Capacity	
Treatment Process	5 liters per batch
Dimensions	
Treatment Process	Approximately 3 feet x 4 feet
Waste Codes	D001 D011 P011 P012 P015 P022 P087 P113 P119 P120 U123 U144 U145 U151 U204 U214 U217
Waste Description	Mixed hazardous
Secondary Containment	
Type	
Treatment Process	Steel or plastic catch basin
Minimum Berm Height	
Treatment Process	Minimum volume to contain 100% of the waste being treated
Drawing Number	
Treatment Process	
Inspection Method	Visual
Process Control Variables	
Maximum	Solid to liquid ratio pH
Minimum	25% waste loading by weight pH 7
Overfill Prevention	
Treatment Process	N/A
P&ID Drawing Number	
Treatment Unit	N/A
Special Unit Conditions	

- 1) Up to 5 liters may be mixed per batch due to the capacity limit of the mixer

TREATMENT PROCESS INFORMATION SHEET

6b Unit 881.3B Bench Scale Treatment of Hazardous Waste Chemicals

Location	Building 881 Room 267 Fume hoods FH-4 and 5
Process Equipment	
Treatment Process	Organic treatment
Design Capacity	
Treatment Process	5 liters per day
Operating Capacity	
Treatment Process	5 liters per batch (maximum)
Dimensions	
Treatment Process	Approximately 3 feet x 4 feet
Waste Codes	D001 D003 D012 D018 D019 D021 D022 D024 D026 D028 D029 D035 D036 D038 D040 D042 P014 P016 P022 P027 P028 P077 P093 P116 P123 U002 U003 U009 U012 U018 U019 U027 U028 U031 U037 U041 U042 U044 U052 U053 U055 U057 U067 U072 U077 U081 U083 U098 U102 U103 U106 U108 U112 U113 U116 U118 U120 U122 U123 U127 U131 U134 U137 U138 U147 U148 U151 U154 U159 U162 U165 U166 U169 U170 U188 U190 U191 U196 U197 U201 U204 U207 U209 U211 U218 U222 U225 U226 U228 U234 U238 U240 U328 U353
Waste Description	Mixed hazardous
Secondary Containment	
Type	
Treatment Process	Steel or plastic catch basin
Minimum Berm Height	
Treatment Process	Minimum volume to contain 100% of the waste being treated
Drawing Number	
Treatment Process	
Inspection Method	Visual
Process Control Variables	None
Maximum	N/A
Minimum	N/A
Overfill Prevention	
Treatment Process	N/A
P&ID Drawing Number	
Treatment Unit	
Special Unit Conditions	None

TREATMENT PROCESS INFORMATION SHEET

6b Unit 881.3B Bench Scale Treatment of Hazardous Waste Chemicals

Location	Various locations on site (case by case determination)
Process Equipment	Varies (case by-case)
Treatment Process	In situ treatment of peroxide forming compounds
Design Capacity	
Treatment Process	location/compound dependent
Operating Capacity	
Treatment Process	location/compound dependent
Dimensions	
Treatment Process	location dependent
Waste Codes	D001 D003 U009 U159 U161
Waste Description	Mixed hazardous
Secondary Containment	
Type	
Treatment Process	Steel or plastic catch basin
Minimum Berm Height	
Treatment Process	Minimum volume to contain 100% of the waste being treated
Drawing Number	
Treatment Process	N/A
Inspection Method	Visual
Process Control Variables	Peroxide concentration
Maximum	N/A
Minimum	When peroxides are no longer detected using test strips more reducing agent and inhibitor will be added to the solution to complete treatment.
Overfill Prevention	
Treatment Process	N/A
P&ID Drawing Number	
Treatment Unit	N/A
Special Unit Conditions	
1)	Plastic shielding and use of a blast suit or other appropriate bunker gear with hoods and gloves are typically required Personal protective equipment for those involved in the treatment of the chemicals will be determined prior to the treatment occurring

PART VI WASTE ANALYSIS PLAN

TABLE OF CONTENTS

A	INTRODUCTION	IV 1
1	Objective	IV 1
2	Contents of the Waste Analysis Plan	IV 1
B	PREACCEPTANCE GUIDELINES	IV 1
1	Hazardous Waste Determination	IV 1
2	Identify Unit Specific Waste Acceptance Criteria	IV 2
3	Sampling and Analysis	IV 2
4	Transfer Waste Analysis Information	IV 2
5	Review by Unit Owner	IV 2
6	Frequency of Characterization Validation	IV 2
C	WASTE VERIFICATION	IV 3
1	Waste Verification	IV 3
2	Response to Inconsistencies	IV 3
D	POST TREATMENT ANALYSIS	IV 3
E	SAMPLING METHODS	IV 3
F	ANALYTICAL METHODS	IV 3
G	QUALITY ASSURANCE/QUALITY CONTROL	IV-4
H	UNIT SPECIFIC REQUIREMENTS	IV-4

LIST OF TABLES

Table IV 1	Matrix Specific Sample Methods
------------	--------------------------------

PART VI WASTE ANALYSIS PLAN

A INTRODUCTION

This Part provides the information necessary to comply with the requirements in 6 CCR 1007 3 Section 264 13 (General Waste Analysis)

1 Objective

This Part covers the analytical requirements and procedures necessary to store or treat hazardous waste safely in tanks container storage areas and treatment units. The information presented in this Part will assist the Permittee in determining waste characteristics necessary to safely store and/or treat hazardous and mixed wastes in accordance with the Colorado Hazardous Waste Regulations.

2 Contents of the Waste Analysis Plan

The Waste Analysis Plan as described in the following sections consists of seven parts

Section B contains a description of the preacceptance guidelines which includes the analyses required by storage or treatment units prior to transfer of waste to the unit.

Section C contains a description of the waste verification steps required for the storage or treatment unit prior to final waste acceptance.

Section D contains post treatment waste analysis requirements.

Section E contains sampling methods.

Section F contains analytical methods.

Section G contains quality assurance/quality control measures.

Section H contains unit specific waste acceptance criteria rationale.

B PREACCEPTANCE GUIDELINES

1 Hazardous Waste Determination

Except as to waste stored as backlog, generators of waste at RFETS conduct ongoing waste analysis to determine which solid wastes are hazardous wastes. This hazardous waste determination is required for generators by 6 CCR 1007 3 Section 262 11. The information obtained as part of the hazardous waste determination is used to assign EPA codes, determine compatibility codes, and identify wastes subject to Land Disposal Restrictions. Generators may use process knowledge, laboratory analysis, or a combination of these to obtain this information. This will become the basis for information that unit owners will use to determine if wastes meet the acceptance criteria for a particular unit governed by this permit.

2 Identify Unit Specific Waste Acceptance Criteria

In addition to number 1 above the generator should review the unit specific waste acceptance criteria of the designated storage or treatment unit by contacting the unit owner or reviewing the Unit Specific Conditions outlined in Parts III and XVI respectively of this permit. Based on this information, the generator should determine whether the waste to be transferred will satisfy the unit specific waste acceptance criteria.

In addition to unit specific waste acceptance criteria for the units managed within this permit the Rocky Mountain Remediation Services Waste Acceptance Criteria document (RMRS WAC) also includes waste acceptance criteria for anticipated destination treatment or disposal facilities. When practicable the analysis of the waste should take into consideration the waste acceptance criteria for the destination off site treatment or disposal facility.

3 Sampling and Analysis

If laboratory analysis is required a representative sample of the waste will be collected in accordance with Appendix I of 6 CCR 1007.3 Section 261. Section E of this Part provides a matrix of appropriate sampling methods.

All samples will be submitted to the on Site laboratory or an RFETS approved off Site laboratory for analyses. The appropriate analytical methods are provided in Section F of this Part. Sample management quality control/quality assurance procedures are described in Section G of this Part.

4 Transfer of Waste Analysis Information

Prior to waste transfer the generator will provide preacceptance information to the unit owner of the destination storage or treatment unit by one of the following means: a Waste Processing Request Form, Waste/Residue Traveler, the Waste Acceptance Criteria and Hazardous Waste Information Forms, and/or the WEMS. Regardless of how provided the information will contain at a minimum the following:

- information demonstrating that the waste complies with the unit specific waste acceptance criteria
- the volume of waste to be transferred
- the current location of the waste

5 Review by Unit Owner

Upon receipt of the waste characterization information the owner of the storage or treatment unit to which the waste will be sent will review the characterization and verify that the waste can be accepted at the unit according to the unit specific requirements.

6 Frequency of Characterization Validation

Characterization of each hazardous waste stream to be sent to a storage or treatment unit will be validated according to the following guidelines:

- a. If the waste is a one time generation or if the waste is stored as backlog each waste stream will be validated in accordance with numbers 1 and 2 above. The generator may use process knowledge, laboratory analysis, or a combination of these to characterize the waste.

- b If the waste is currently being generated from an on going process the unit owner will verify that the characterization information is current Information will be current if it has been updated within 13 months An update is either a confirmation that the waste stream has remained unchanged or new or modified characterization information.

C WASTE VERIFICATION

1 Waste Inspection

The unit owner will inspect the waste for the following as appropriate
Discrepancies between the waste and the label(s) or markings
Discrepancies between the volume of the waste and the volume designated on the information supplied
Properly completed notification or certification statements
Container integrity

2 Response to Inconsistencies

If any inconsistencies are detected the unit owner will notify the generator of the inconsistencies and either not accept the waste or request additional information or analysis as necessary to resolve the inconsistency

D POST TREATMENT ANALYSIS

Post treatment tests serve to assure that waste treatment is complete prior to transferring waste to the next treatment process to storage or off Site Post treatment tests may include sampling of surrogate waste or actual waste from containers tanks pipelines or pump taps or continuous in line analysis The sample location and frequency are specified in the Unit Specific Conditions for treatment units (Part XVI of this Permit) along with specific waste parameters and rationale

E SAMPLING METHODS

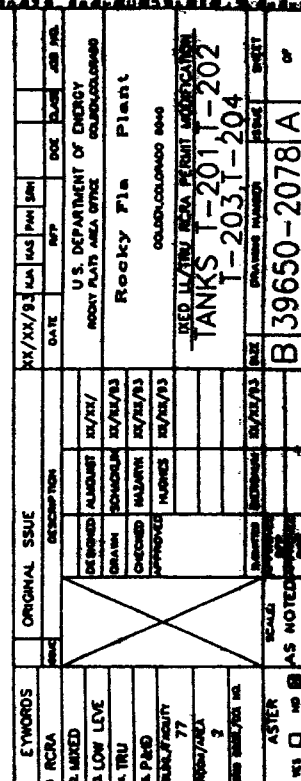
Sampling methods used to collect hazardous waste samples at Rocky Flats comply with those described in Appendix I of 6 CCR 1007 3 Section 261 or an equivalent method as allowed in 6 CCR 1007 3 Section 264 13(b)(3) Sampling location sample matrix sample container type and size and accessibility are taken into consideration when assigning a sampling method in order to ensure collection of a representative sample Table IV 1 lists waste matrices and appropriate sample methods

F ANALYTICAL METHODS

Specialized procedures have been developed at Rocky Flats to meet the technical requirements of analyzing certain wastes such as those containing radionuclides or compounds which interfere with the accuracy or precision of the analysis These test methods are entitled L Procedures L Procedures are based on test methods found in 6 CCR 1007 3 Part 261 "Test Methods for Evaluating Solid Wastes Physical/Chemical Methods EPA Publication SW 846 [Third Edition (November 1986) as amended by Updates I (July 1992) II (September 1994) and IIA (August 1993)] Methods for Chemical Analysis of Water and Wastes EPA Publication No 600/4 79-020 (1979) and various other EPA approved protocols such as those from the American Society of Testing and Materials (ASTM)

1) EQUIPMENT AND MATERIAL SHOWN ARROW BOXES ARE NOT CONSIDERED PART OF THE REGULATED UNIT

<u>I 203</u>	<u>I 204</u>
2ND STAGE BATCH PRECIPITATION	2ND STAGE BATCH PRECIPITATION

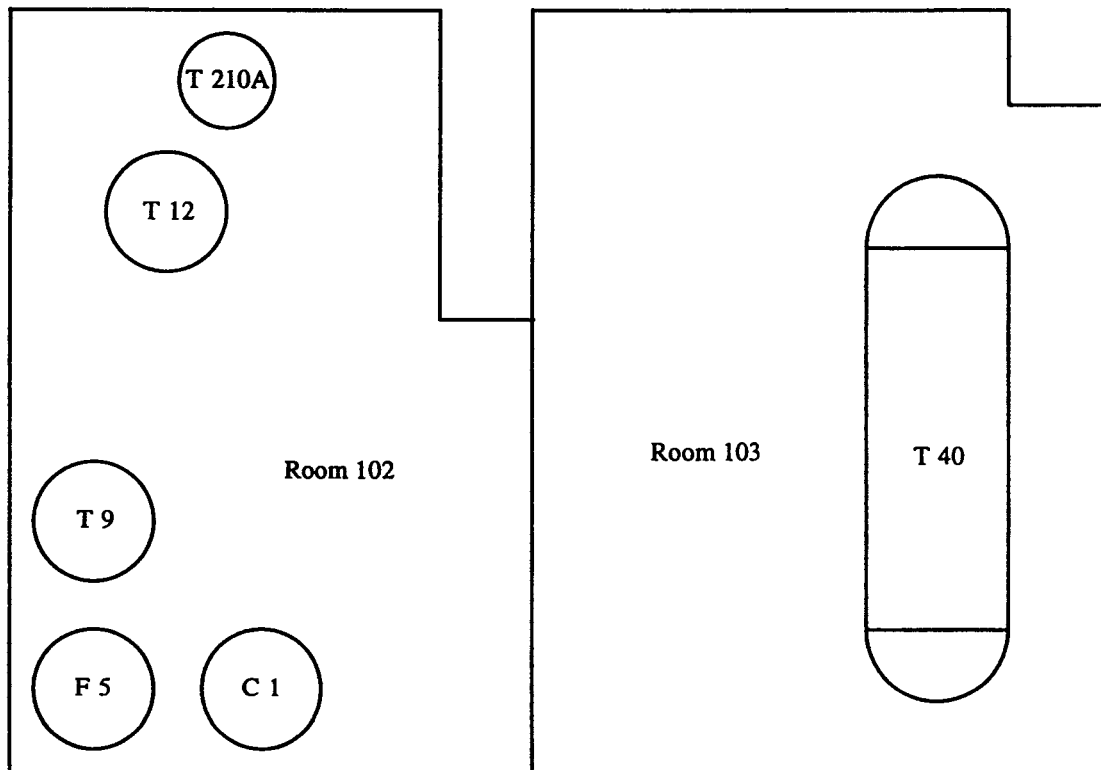


317

V-32b 44a

RFP BCRA Permit Mod Request #14
Draft Mixed LL/TRU 3/1/93 Rev 1

RCRA Unit 774 3B
Room 102 and 103

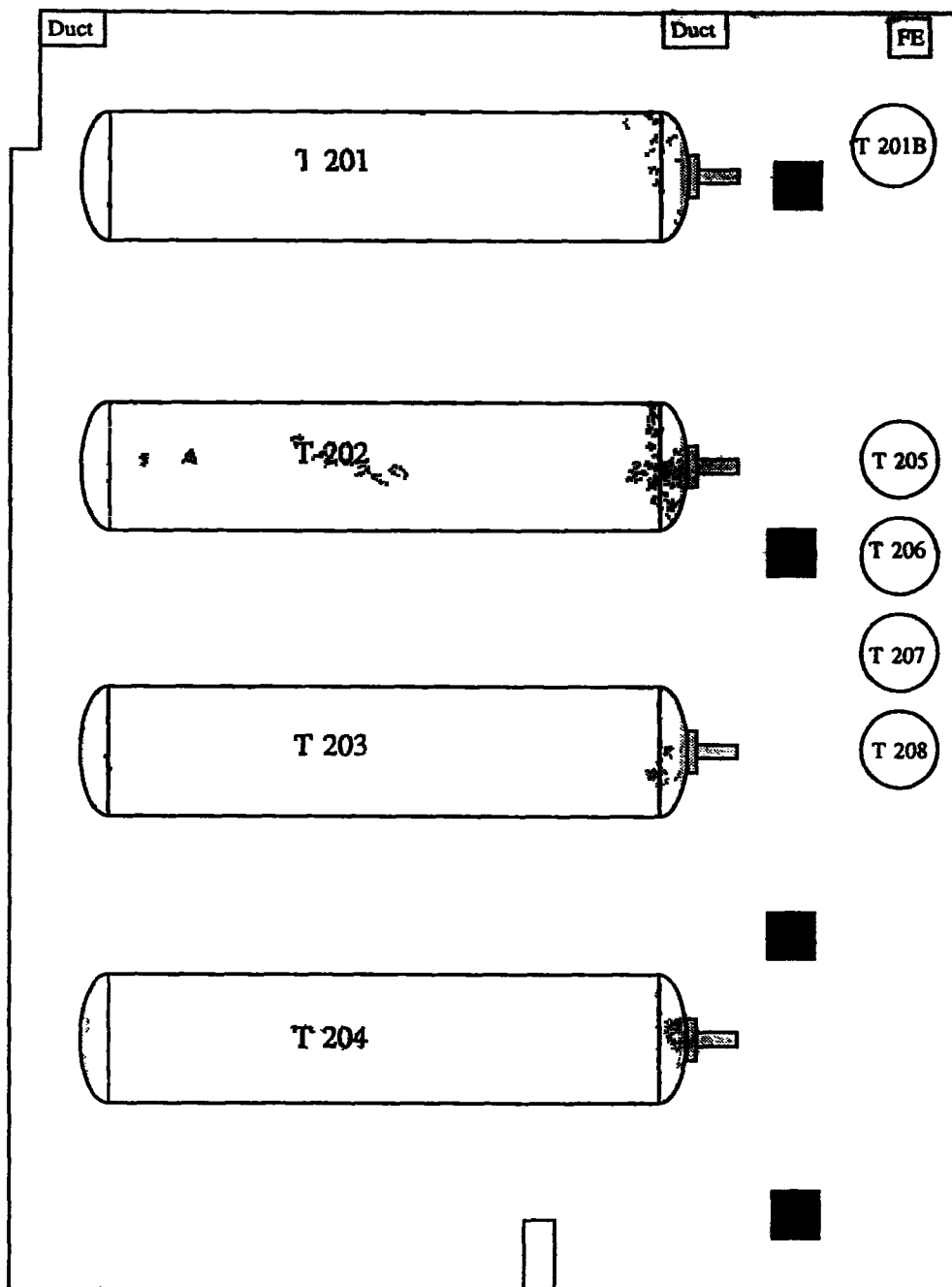


NOTE



- 1) Floor drains in rooms 102 and 103 drain to sump tank SP 202

v ~~328~~ 446

318



Legend

-  Column
-  Fire Extinguisher

Rocky Flats Environmental Technology Site
RCRA Unit 774, 23
Building 774, Room 241

5 Unit 776.3 Building 776

This RCRA treatment unit contains the Advanced Size Reduction Facility (ASRF). The ASRF is located in Room 134 of Building 776 and is used to size reduce repackage and wash various types of waste (both mixed and non mixed). Wastes subject to processing in the ASRF will be characterized as necessary in accordance with the Waste Analysis Plan (Part VI of this permit) and approved process procedures.

The ASRF is a structure within Building 776 equipped with heat ventilation air conditioning and exhaust systems that are independent of the building. Wastes subject to treatment in the ASRF are introduced into the facility and treated as necessary using any or all of the available treatment processes. Wastes may be steam cleaned or washed to remove external contamination prior to packaging or size reduced by compacting, disassembling (either manually or remotely) or cutting using a plasma arc unit. Another form of treatment that occurs in the ASRF is liquid removal or solidification. These treatment processes include the addition of absorbents or cement to waste to remove or immobilize liquids. Wastes subject to treatment in the ASRF include contaminated solid wastes, gloveboxes, combustibles, high efficiency particulate air (HEPA) filters, machine tools, hazardous debris, processing equipment, plastic insulation, sludge, filter socks, blacktop, concrete, soil, and spill clean up materials such as wipes, booms, and oil dry.

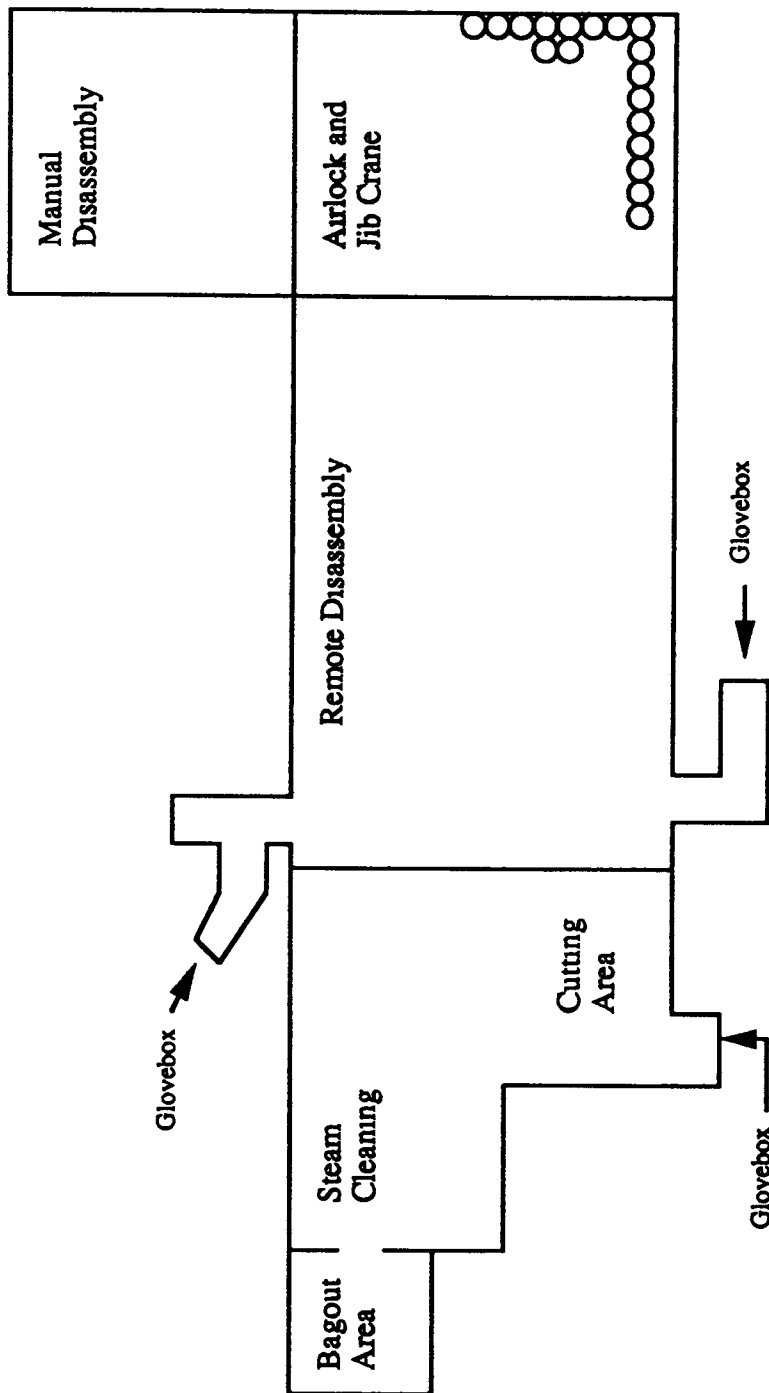
Following treatment in the ASRF, wastes are packaged in appropriate waste containers. Waste liquids and solids resulting from the processes are either transferred for treatment in other facilities at the Site or packaged for storage and disposal.

TREATMENT PROCESS INFORMATION SHEET

5 Unit 776.3 Advanced Size Reduction Facility

Location	Building 776 Room 134
Process Equipment	Gloveboxes steam cleaner plasma arc cutter jib crane remote manipulators
Treatment Process	(1) Size reduction, (2) Chemical treatment using cleaning and washing equipment and processes and (3) Stabilization and Solidification using absorbants and cement
Design Capacity Treatment Process	25 cubic yards per week
Operating Capacity Treatment Process	Not applicable
Dimensions Treatment Process	40 feet wide x 100 feet long (approximately)
Waste Codes	D001 D002 D003 D004 D005 D006 D007 D008 D009 D010 D011 D018 D019 D028 D029 D035 D038 D039 D040 D043 F001 F002 F003 F005 F006 F007 F008 F009 P011 P012 P014 P015 P022 P028 P029 P030 P045 P062 P076 P087 P098 P101 P104 P105 P106 P113 P116 P119 P120 P121 U002 U003 U004 U019 U031 U037 U041 U042 U043 U044 U055 U056 U057 U067 U071 U074 U075 U077 U079 U080 U084 U098 U102 U107 U108 U112 U120 U121 U122 U123 U127 U131 U133 U134 U138 U144 U148 U151 U154 U158 U159 U161 U162 U165 U167 U169 U170 U188 U190 U191 U196 U201 U204 U207 U209 U210 U211 U213 U214 U215 U216 U217 U218 U219 U220 U225 U226 U227 U228 U236 U239 U246 U328 U353 U359
Waste Description	Mixed
Secondary Containment Type	
Treatment Process	Catch basins or stainless steel
Minimum Berm Height	
Treatment Process	Not applicable see Process specific Condition #2
Drawing Number	
Treatment Process	P&C 0006
Inspection Method	Visual
Process Control Variables	
Maximum	None
Minimum	None
Overfill Prevention	
Treatment Process	None

UNIT 776 3 ADVANCED SIZE REDUCTION FACILITY
ROOM 134, BUILDING 776



NOTES

- 1) This drawing is not to scale and does not depict the actual location of equipment
- 2) The container layout shown is typical and may not depict the actual container arrangement.

V 460

6 Unit 881.3 Building 881

This RCRA treatment unit includes two treatment processes Electrochemical Chlorination and Bench Scale Treatment of Hazardous Chemicals Both of the treatment units are discussed in the following

a Unit 881 3A Electrochemical Chlorination

The Electrochemical Chlorination treatment process is located in Room 245 of Building 881 and is used to treat reactive cyanide waste consisting of solutions and/or solids Wastes subject to treatment in this process are characterized by sampling and analysis conducted in accordance with the Waste Analysis Plan (Part VI of this permit) and approved process procedures Post treatment sampling and analysis is also conducted to ensure the treatment has been successful The electrochemical chlorination process is used to destroy the cyanide complex by generating chlorine

Specific pre treatment analyses include verification of the EPA hazardous waste code and waste type solubility and iron cyanide content Post treatment analyses to be completed include pH/normality RCRA Toxicity Characteristic (TC) metals and total and amenable cyanide

Wastes which are to be treated in this process must be in liquid form If solid wastes require processing they must first be dissolved in an appropriate solvent The solution is pumped from the reaction container to the flow through electrochemical cell which provides the initial reaction with electrical energy Chlorine gas results from this reaction and becomes the primary oxidizer for subsequent reactions In the next reaction cyanide is converted into cyanate ions which are ultimately converted to carbon dioxide and nitrogen.

Process equipment includes a 55 gallon reaction vessel with a mixer a recirculation pump a flow through electrochemical cell a fume hood used to capture fumes resulting from the processing and a fume scrubber For the protection of the process operators the treatment process is also equipped with various gas detection equipment

b Unit 881 3B Bench Scale Hazardous Waste Chemical Treatment

The Bench Scale Hazardous Waste Treatment Process includes five specific treatment processes including ultraviolet oxidation, hydrolysis cementation organic treatment and in situ treatment. Wastes proposed for treatment include but are not limited to expired and off specification chemicals and laboratory reference standards and the wastes derived from treatment of those materials Wastes other than expired and off specification chemicals and reference standards may be treated in this unit, however prior to treatment the on duty chemist must develop additional pre and post treatment waste acceptance criteria for the specific wastes since they may contain constituents which could impair the effectiveness of treatment. The waste acceptance criteria developed will allow for the safe treatment of the waste to result in an acceptable post treatment waste form Additional waste acceptance criteria developed for unique wastes will be documented in the operating record for the treatment process

Excluding backlog excess chemicals once a hazardous waste chemical has been discovered the Permittee has 90 days to treat (if necessary) and transport the waste off site with the exception of waste rendered non hazardous as a result of treatment or which has been verified as radioactive If the total time necessary to transfer the waste off site will exceed 90 days the Permittee may request an extension from the Division prior to the expiration of the 90 days

Shock sensitive hazardous or mixed waste chemicals (i.e. chemicals capable of detonation or explosive reaction if subjected to a strong initiating source or if heated under confinement) will be destroyed, transferred off site, or placed in isolated storage in Unit 993.1 within 14 calendar days of discovery. Verbal requests for extensions to the 14 calendar days requirement may be approved verbally by the Division.

For the treatment of reactive chemicals, the amount of waste treated during each run must be small enough to preclude violent or uncontrolled reactions. Additionally, the treatment must be conducted to prevent the generation of hydrogen gas in amounts sufficient to pose a fire or explosion hazard.

Wastes subject to treatment through this process will be evaluated by the on-duty chemist to ensure each waste is properly treated. The individual treatment processes that make up this treatment unit are capable of providing treatment options for nearly all of the excess waste chemicals and standards that have been previously identified at the Site. In some cases, waste chemicals may be subjected to more than one treatment process to result in an acceptable final waste form.

Except for in situ treatment, hazardous waste chemicals will be treated in Building 881, Room 267. In situ treatment will be performed at the location where the hazardous waste chemical is discovered or at an alternate location if deemed appropriate by Site personnel. The treatment processes in this unit may also be performed at alternate locations provided the Division is notified at least 7 days prior to the initiation of treatment at the alternate location.

Operation of the treatment processes within this unit will be supervised by the on-duty chemist. The on-duty chemist will have a minimum of a Bachelor of Science degree in chemistry and a minimum of 3 years practical experience in chemistry. All treatment, with the exception of in situ treatment, may be performed by trained qualified personnel under the direct supervision of the on-duty chemist. In situ treatment will be performed only by the on-duty chemist meeting the minimum qualifications listed above. In situ treatment may only be performed by an on-duty chemist possessing a minimum of five years experience in organic chemistry including direct experience stabilizing peroxide forming chemicals/compounds.

The following provides a process specific description of each of the treatment processes associated with this unit:

Ultraviolet (UV) Oxidation

The UV Oxidation treatment process is located in Room 267 in Building 881. UV oxidation uses hydrogen peroxide (H_2O_2) and UV light to destroy organic chemicals such as trichloroethane, tetrachloroethane, vinyl chloride, and aromatic compounds such as phenol, toluene, benzene, and xylene. Pre and post treatment evaluation and/or analysis will be conducted in accordance with process procedures. Pre treatment analyses will be limited to solubility testing once the waste chemical has been determined to be a candidate for treatment based on approved waste codes for the UV oxidation process. Following treatment, the treated waste will be tested analytically to determine if applicable LDR disposal criteria have been met or a determination based on process knowledge will be made as to the LDR status of the treated waste. Additional analysis may be necessary to meet waste acceptance criteria for any subsequent treatment process(es); the waste will be subjected to

The UV oxidation process equipment is located on a portable cart that can be locked into position during treatment. Process equipment includes a 5 gallon holding tank a static mixer an immersion chiller a flow meter a UV chamber and two pumps

In the UV oxidation process organic chemicals are dissolved in water and placed into a 5 gallon holding tank where hydrogen peroxide (H_2O_2) is added to the solution. The solution is then pumped out of the tank to the static mixer through the flow meter into the UV reaction chamber. Inside the UV chamber hydroxyl radicals are generated through UV photolysis of the H_2O_2 . The hydroxyl radicals attack organic compounds and oxidize them. The solution is then returned to the holding tank. This process continues until the organic compounds are eventually destroyed. The treatment system is equipped with a UV meter to assist in determining when the reaction has been completed. The chemist conducting the treatment will control certain parameters (e.g. retention time H_2O_2 dose influent pH level and solution temperature) during the treatment process to optimize treatment.

A containment structure is placed around the equipment on the cart during operation of the treatment process to capture any organic vapor emissions. Any vapors captured are vented to the Building 881 exhaust system. Because heat is liberated during the organic destruction process (exothermic reaction) and to prevent excessive loss of organic compounds through evaporation the holding tank is cooled with an immersion chiller.

Following treatment, the resultant waste form is managed as a non hazardous waste and disposed of appropriately or transferred for further treatment in on site or off site processes.

Hydrolysis

This process in Unit 881 3B is located in Fume hoods 4 and 5 in Room 267 of Building 881. Hydrolysis is a treatment process for waste chemicals that uses water to hydrolyze reactive metals and metal hydrides oxides sulfites and carbides to result in stable non reactive compounds.

Pre treatment screening of the waste chemicals proposed for treatment through the hydrolysis process will occur to ensure they are a water reactive metal or compound and are authorized for treatment by the approved waste codes for the treatment process. Post treatment analysis will be conducted if necessary to meet waste acceptance criteria for any subsequent treatment processes the final waste form will be subjected to. This treatment process will be conducted in a fume hood in small laboratory containers (i.e. beakers or flasks) with a splash shield in place as required.

Reactive chemicals will be added to water in a controlled manner to minimize splattering of the chemicals. An exothermic reaction will occur as the reactive metal or compound reacts with the water liberating heat and small amounts of hydrogen. The resulting liquid generated from the treatment process will be adjusted with an appropriate acidic or basic material to a pH between 2 and 12. Wastes resulting from the hydrolysis treatment process typically will be suitable for final treatment in the appropriate waste water treatment facility at the Site (either Building 374 Building 774 or Building 910).

Cementation

The cementation process in Unit 881 3B will occur in Fume hoods 4 and 5 in Room 267 of Building 881. The cementation process is used to immobilize hazardous waste chemicals or waste water derived from other treatment processes in Unit

881 3B Wastes to be treated can be liquid or solid however the best candidates for cementation are insoluble inorganic and organic salts metal fines metal powders and liquids that are basic and non reactive with cement Pre treatment analysis will be conducted to determine the pH if the waste is a liquid

Post treatment analysis will be conducted on a representative sample of the solidified waste form to ensure the waste meets LDR criteria for disposal In addition, the waste will be evaluated to ensure proper solidification of the waste has occurred and no free liquids remain.

The pH of liquid wastes will be adjusted if necessary to a minimum pH of 7 before cementation. The waste chemicals are mixed with cement and/or fly ash in a 5 liter mixer located in a fume hood at a predetermined ratio into a homogenous waste form Then the waste is poured from the mixer into a container and allowed to cure and solidify Following successful treatment, the final waste form will be managed as a non hazardous waste and disposed of properly

Organic Treatment

The Organic treatment process in Unit 881 3B is located in Fume hood 4 and 5 in Room 267 of Building 881 This treatment process uses controlled chemical reactions to break down organic waste chemicals (typically ignitable toxic or reactive organic compounds) to non toxic compounds such as carbon dioxide hydrogen, and water Pre treatment evaluation of the candidate waste chemicals will be done to ensure that the chemical is amenable to the organic treatment process and is authorized for treatment based on the approved waste codes for the process Post treatment analysis will be conducted if necessary to meet waste acceptance criteria for any subsequent treatment processes the final waste form will be subjected to

Wastes are treated in batches of 5 liters or less in laboratory containers (i.e. flasks beakers etc.) located in a fume hood Small quantities of waste chemicals are slowly added to the solvent to maintain control of the reaction. In some cases, the solvent will be diluted to further restrict the reaction. The waste chemical being treated will continue to be added to the solvent until all has been treated The solvent containing the waste chemical will then be allowed to complete the reaction before being removed to a bottle for further waste management activities

The resultant waste form will be transferred for additional treatment within this treatment unit or another at the Site or will be managed appropriately prior to treatment and or disposal at an off site facility

In Situ Treatment of Peroxides and Peroxide Forming Compounds

The in situ treatment process will be conducted in various locations around the Site on an as needed basis in accordance with specific operational requirements This process is used to destroy peroxides and peroxide forming organic compounds discovered in various locations around the Site by the addition of chemicals that reduce and inhibit the formation of peroxides Chemicals capable of detonation or explosive reaction if subjected to a strong initiating source or if heated under confinement may be introduced into this treatment process A pre treatment evaluation of the waste chemical will be conducted to ensure it is authorized for treatment based on the approved waste codes for the process Post treatment requirements for analysis will be dependent on the final disposition of the treated waste Applicable waste acceptance criteria for subsequent waste treatment processes or disposal will be met as necessary

Due to the unstable nature of peroxides treatment will be completed at or near the

location where the peroxide or peroxide forming compound is discovered or at an alternate location if deemed appropriate by authorized site personnel. Prior to the initiation of treatment operations a Job Safety Analysis (JSA) addressing any special hazards presented by the waste chemical to be treated, the treatment process, and precautions to be taken will be prepared.

All personnel associated with the treatment process will be made aware of the JSA and any special requirements or precautions it mandates. All treatment events will be conducted in accordance with the requirements identified in the JSA. At any time during the conduct of the treatment, the on duty chemist or industrial hygienist may require additional PPE, modify the treatment processes, or add other precautionary measures to assure safe and effective treatment.

Peroxide forming compounds may vaporize at temperatures greater than 90° F and condense as unstable crystals (especially on the inside of a container lid). Opening these containers poses a risk of detonation. If any crystals are visually detected within a discovered container, personnel must stop operations in the area and notify their supervisor. Once the area has been isolated, Site personnel should immediately contact the Division to assist in determining appropriate management of the container. If deemed necessary, the Permittee shall request an emergency permit within 7 calendar days.

For containers without internal crystal formation, the container will be carefully inverted for at least 24 hours before opening to dissolve any peroxide crystals that may have formed under the cap or on the threads of the container. After the container is opened, an appropriate reducing agent (e.g., ferrous ammonium sulfate) will be added to the peroxide forming compound to reduce the concentration of peroxide.

Test strips used to detect the presence of peroxides will be used intermittently during the addition of the reducing agent until peroxides are no longer detected. More reducing agent and an appropriate inhibitor (e.g., 2,6-Di-tert-butyl-4-methylphenol) will then be added to minimize additional peroxide formation.

Treated chemicals will be removed from the treatment area and repackaged into the original container if possible, in accordance with applicable waste packaging procedures.

The treated waste will be sent to the UV oxidation process in Building 881 for final destruction of peroxide forming organic compounds or packaged for off site shipment for additional treatment and disposal.

TREATMENT PROCESS INFORMATION SHEET

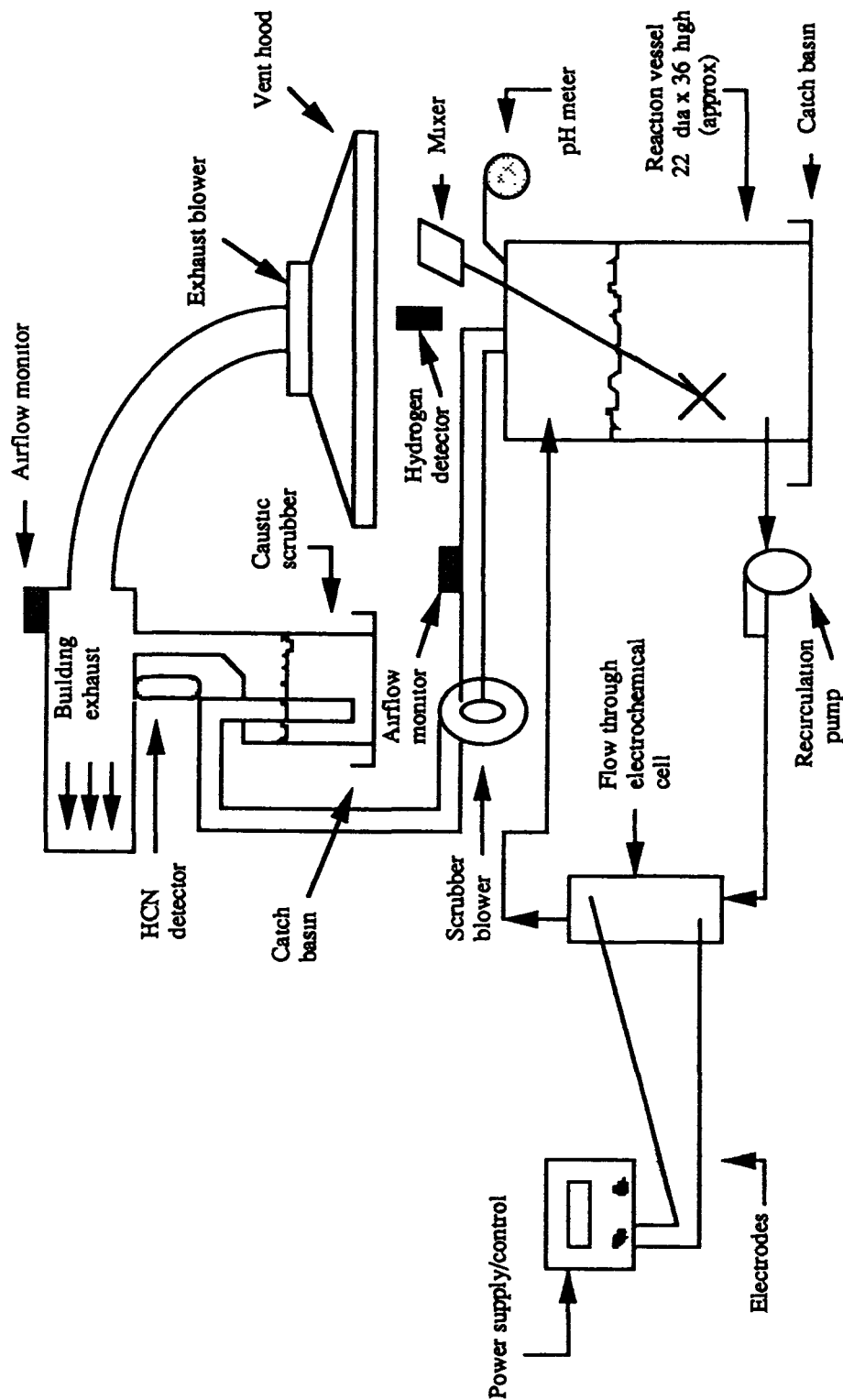
6a Unit 881.3A Electrochemical Chlorination

Location	Building 881 Room 245
Process Equipment	Reaction vessel recirculation pump electrochemical cell fume hood and fume scrubber
Treatment Process	Chemical treatment electrochemical chlorination cyanide destruction
Design Capacity Treatment Process	55 gallons
Operating Capacity Treatment Process	30 gallons (approximate) per batch
Dimensions Treatment Process	Approximately 18 feet x 11 feet
Waste Codes	D002 D003 D006 D008 D011 F007 P029 P031 P074 P098 P104 P106 P121
Waste Description	Mixed hazardous
Secondary Containment Type	
Treatment Process	Catch basin
Minimum Berm Height Treatment Process	Not Applicable see Process specific Condition #1
Drawing Number Treatment Process	42044 500
Inspection Method	Visual
Process Control Variables	pH concentration of salts
Maximum	Not Applicable
Minimum	pH for Scrubber >12 pH for Reaction vessel >10 Concentration of salts approximately 5% salt (weight) Electrical current approximately 40 amperes
Overfill Prevention Treatment Process	Direct monitoring
P&ID Drawing Number Treatment Process	42044 500

Process specific Conditions

- 1) The catch basin for the process must be capable of containing 100% of the waste present within the treatment process

RCRA Unit 881 3A ELECTROCHEMICAL CHLORINATION
BUILDING 881, ROOM 245



NOTES

- 1) Drawing is not to scale and may not depict the actual size or location of equipment

V 40a 52a 52a

TREATMENT PROCESS INFORMATION SHEET

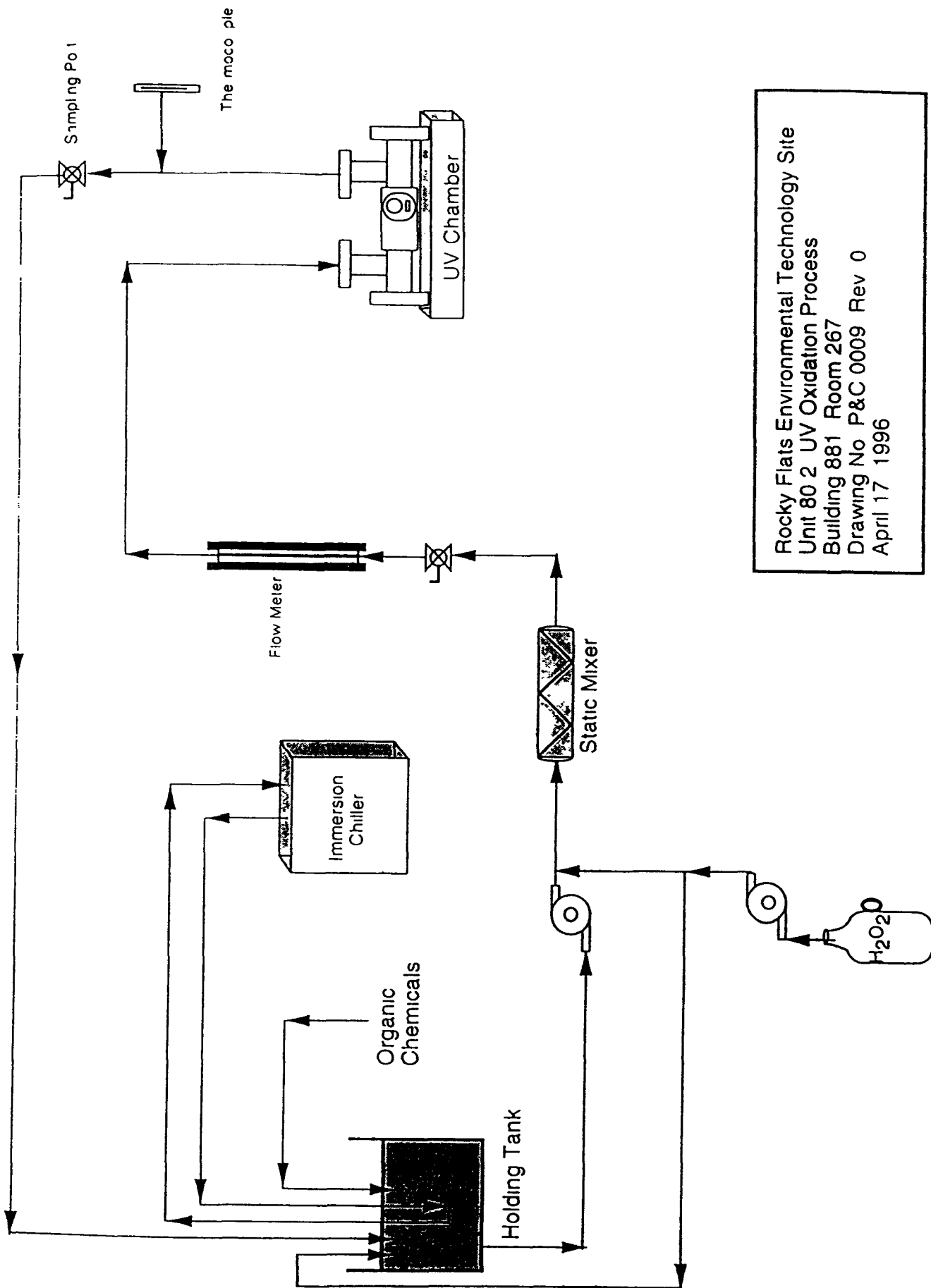
6b Unit 881.3B Bench Scale Treatment of Hazardous Waste Chemicals

Location	Building 881 Room 267
Process Equipment	Holding tank immersion chiller UV chamber flow meter static mixer and pumps
Treatment Process	UV Oxidation
Design Capacity	
Treatment Process	1 liter per day
Operating Capacity	
Treatment Process	1 liter per day
Dimensions	
Treatment Process	Approximately 4 feet x 4 feet
Waste Codes	D001 D003 D022 D029 D035 P016 U002 U003 U009 U027 U031 U044 U077 U080 U108 U112 U113 U123 U154 U159 U161 U188
Waste Description	Mixed hazardous
Secondary Containment	
Type	
Treatment Process	Catch basin formed as part of portable cart base
Minimum Berm Height	
Treatment Process	Minimum volume to contain 100% of the waste being treated
Drawing Number	
Treatment Process	P&C 0008 and 0009
Inspection Method	Visual
Process Control Variables	
Maximum	<u>UV transmission</u> <u>UV lamp on or off</u>
Minimum	30 000 microwatt per cm ²
	N/A
Maximum	<u>Peroxide feed rate</u> <u>Peristaltic pump</u>
Minimum	20 milliliters per minute (or 30% by weight)
	N/A
Overfill Prevention	
Treatment Process	N/A
P&ID Drawing Number	
Treatment Unit	N/A

Special Unit Conditions

- 1) Staging of chemicals to be treated may occur in fume hood FH 3 for a period of up to 90 days Volume of the staging area is limited to the volume the hood can secondarily contain
- 2) Retention time temperature waste influent percentage and concentration maximum will be identified in the operating record for each treated waste stream

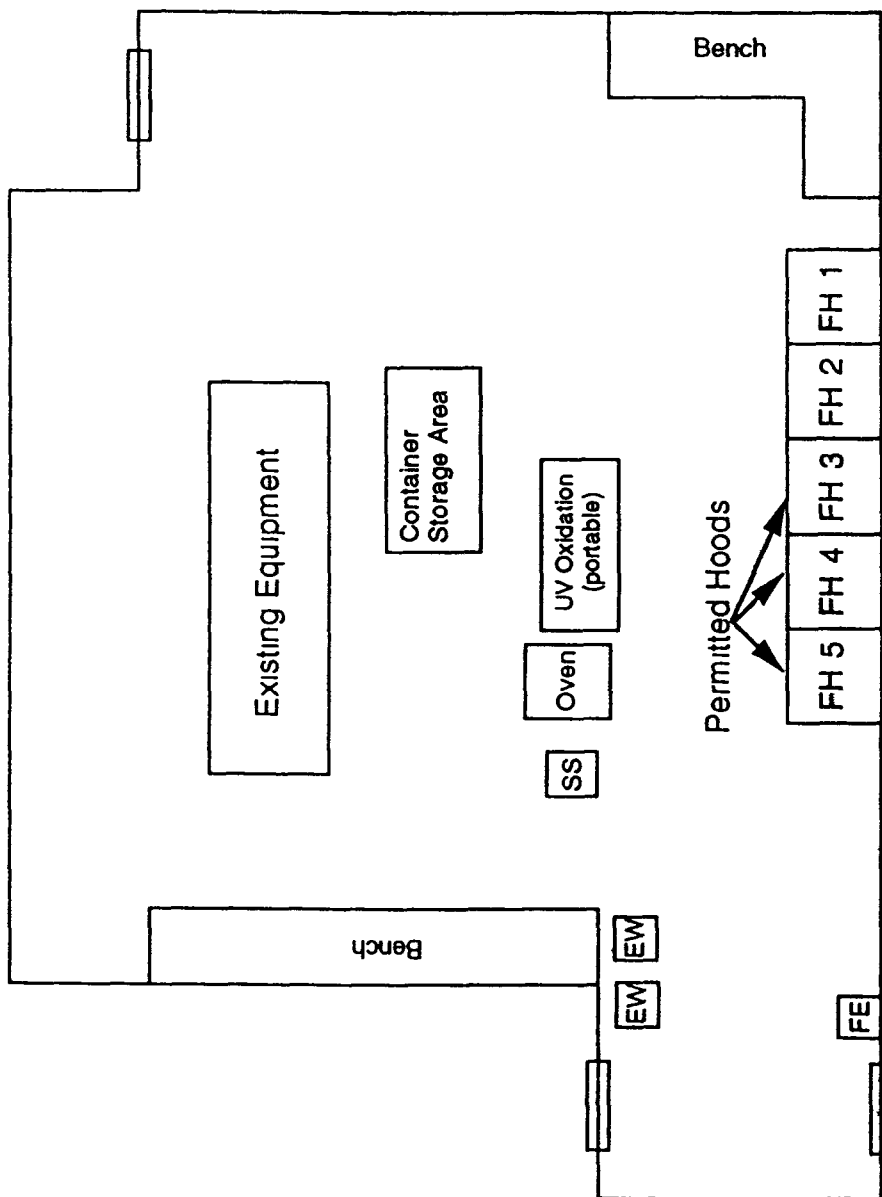
330



Rocky Flats Environmental Technology Site
 Unit 80 2 UV Oxidation Process
 Building 881 Room 267
 Drawing No P&C 0009 Rev 0
 April 17 1996

V-53a

331



Note Containers may be stored up to the capacity of
six 55 gallon drums for EPA Waste Codes and Waste
Descriptions allowed in Units 80 1 and 80 2

Rocky Flats Environmental Technology Site
Unit 80 2 Layout Building 881 Room 267
Drawing No P&C 0008 Rev 0
April 17 1996

V-536

332

TREATMENT PROCESS INFORMATION SHEET

6b Unit 881.3B Bench Scale Treatment of Hazardous Waste Chemicals

Location	Building 881 Room 267 Fume hoods FH-4 and 5
Process Equipment	
Treatment Process	Hydrolysis
Design Capacity	
Treatment Process	5 liters per day
Operating Capacity	
Treatment Process	5 liters per day
Dimensions	
Treatment Process	Approximately 3 feet x 4 feet
Waste Codes	D001 D003 D005
Waste Description	Mixed hazardous
Secondary Containment	
Type	
Treatment Process	Steel or plastic catch basin
Minimum Berm Height	
Treatment Process	Minimum volume to contain 100% of the waste being treated
Drawing Number	
Treatment Process	
Inspection Method	Visual
Process Control Variables	Temperature treatment will continue until no additional rise in temperature occurs in the solution
Maximum	pH 12
Minimum	pH 2
Overfill Prevention	
Treatment Process	N/A
P&ID Drawing Number	
Treatment Unit	N/A
Special Unit Conditions	
1)	Personal splash protection will be used at all times during operation of the treatment process

TREATMENT PROCESS INFORMATION SHEET

6b Unit 881.3B Bench Scale Treatment of Hazardous Waste Chemicals

Location	Building 881 Room 267 Fume hoods FH-4 and 5
Process Equipment	
Treatment Process	Cementation
Design Capacity	
Treatment Process	25 liters per day
Operating Capacity	
Treatment Process	5 liters per batch
Dimensions	
Treatment Process	Approximately 3 feet x 4 feet
Waste Codes	D001 D011 P011 P012 P015 P022 P087 P113 P119 P120 U123 U144 U145 U151 U204 U214 U217
Waste Description	Mixed hazardous
Secondary Containment	
Type	
Treatment Process	Steel or plastic catch basin
Minimum Berm Height	
Treatment Process	Minimum volume to contain 100% of the waste being treated
Drawing Number	
Treatment Process	
Inspection Method	Visual
Process Control Variables	
Maximum	Solid to liquid ratio pH
Minimum	25% waste loading by weight pH 7
Overfill Prevention	
Treatment Process	N/A
P&ID Drawing Number	
Treatment Unit	N/A
Special Unit Conditions	

- 1) Up to 5 liters may be mixed per batch due to the capacity limit of the mixer

TREATMENT PROCESS INFORMATION SHEET

6b Unit 881.3B Bench Scale Treatment of Hazardous Waste Chemicals

Location	Building 881 Room 267 Fume hoods FH-4 and 5
Process Equipment	
Treatment Process	Organic treatment
Design Capacity	
Treatment Process	5 liters per day
Operating Capacity	
Treatment Process	5 liters per batch (maximum)
Dimensions	
Treatment Process	Approximately 3 feet x 4 feet
Waste Codes	D001 D003 D012 D018 D019 D021 D022 D024 D026 D028 D029 D035 D036 D038 D040-D042 P014 P016 P022 P027 P028 P077 P093 P116 P123 U002 U003 U009 U012 U018 U019 U027 U028 U031 U037 U041 U042 U044 U052 U053 U055 U057 U067 U072 U077 U081 U083 U098 U102 U103 U106 U108 U112 U113 U116 U118 U120 U122 U123 U127 U131 U134 U137 U138 U147 U148 U151 U154 U159 U162 U165 U166 U169 U170 U188 U190 U191 U196 U197 U201 U204 U207 U209 U211 U218 U222 U225 U226 U228 U234 U238 U240 U328 U353
Waste Description	Mixed hazardous
Secondary Containment	
Type	
Treatment Process	Steel or plastic catch basin
Minimum Berm Height	
Treatment Process	Minimum volume to contain 100% of the waste being treated
Drawing Number	
Treatment Process	
Inspection Method	Visual
Process Control Variables	None
Maximum	N/A
Minimum	N/A
Overfill Prevention	
Treatment Process	N/A
P&ID Drawing Number	
Treatment Unit	
Special Unit Conditions	None

335

TREATMENT PROCESS INFORMATION SHEET

6b Unit 881.3B Bench Scale Treatment of Hazardous Waste Chemicals

Location	Various locations on site (case by-case determination)
Process Equipment	Varies (case by-case)
Treatment Process	In situ treatment of peroxide forming compounds
Design Capacity	
Treatment Process	location/compound dependent
Operating Capacity	
Treatment Process	location/compound dependent
Dimensions	
Treatment Process	location dependent
Waste Codes	D001 D003 U009 U159 U161
Waste Description	Mixed hazardous
Secondary Containment	
Type	
Treatment Process	Steel or plastic catch basin
Minimum Berm Height	
Treatment Process	Minimum volume to contain 100% of the waste being treated
Drawing Number	
Treatment Process	N/A
Inspection Method	Visual
Process Control Variables	Peroxide concentration
Maximum	N/A
Minimum	When peroxides are no longer detected using test strips more reducing agent and inhibitor will be added to the solution to complete treatment.
Overfill Prevention	
Treatment Process	N/A
P&ID Drawing Number	
Treatment Unit	N/A
Special Unit Conditions	
1)	Plastic shielding and use of a blast suit or other appropriate bunker gear with hoods and gloves are typically required Personal protective equipment for those involved in the treatment of the chemicals will be determined prior to the treatment occurring

PART VI WASTE ANALYSIS PLAN

TABLE OF CONTENTS

A	INTRODUCTION	IV 1
1	Objective	IV 1
2	Contents of the Waste Analysis Plan	IV 1
B	PREACCEPTANCE GUIDELINES	IV 1
1	Hazardous Waste Determination	IV 1
2	Identify Unit Specific Waste Acceptance Criteria	IV 2
3	Sampling and Analysis	IV 2
4	Transfer Waste Analysis Information	IV 2
5	Review by Unit Owner	IV 2
6	Frequency of Characterization Validation	IV 2
C	WASTE VERIFICATION	IV 3
1	Waste Verification	IV 3
2	Response to Inconsistencies	IV 3
D	POST TREATMENT ANALYSIS	IV 3
E	SAMPLING METHODS	IV 3
F	ANALYTICAL METHODS	IV 3
G	QUALITY ASSURANCE/QUALITY CONTROL	IV-4
H	UNIT SPECIFIC REQUIREMENTS	IV-4

LIST OF TABLES

Table IV 1	Matrix Specific Sample Methods
------------	--------------------------------

PART VI WASTE ANALYSIS PLAN

A INTRODUCTION

This Part provides the information necessary to comply with the requirements in 6 CCR 1007 3 Section 264 13 (General Waste Analysis)

1 Objective

This Part covers the analytical requirements and procedures necessary to store or treat hazardous waste safely in tanks container storage areas and treatment units. The information presented in this Part will assist the Permittee in determining waste characteristics necessary to safely store and/or treat hazardous and mixed wastes in accordance with the Colorado Hazardous Waste Regulations.

2 Contents of the Waste Analysis Plan

The Waste Analysis Plan as described in the following sections consists of seven parts

Section B contains a description of the preacceptance guidelines which includes the analyses required by storage or treatment units prior to transfer of waste to the unit.

Section C contains a description of the waste verification steps required for the storage or treatment unit prior to final waste acceptance.

Section D contains post treatment waste analysis requirements.

Section E contains sampling methods.

Section F contains analytical methods.

Section G contains quality assurance/quality control measures.

Section H contains unit specific waste acceptance criteria rationale.

B PREACCEPTANCE GUIDELINES

1 Hazardous Waste Determination

Except as to waste stored as backlog, generators of waste at RFETS conduct ongoing waste analysis to determine which solid wastes are hazardous wastes. This hazardous waste determination is required for generators by 6 CCR 1007 3 Section 262 11. The information obtained as part of the hazardous waste determination is used to assign EPA codes, determine compatibility codes, and identify wastes subject to Land Disposal Restrictions. Generators may use process knowledge, laboratory analysis, or a combination of these to obtain this information. This will become the basis for information that unit owners will use to determine if wastes meet the acceptance criteria for a particular unit governed by this permit.

2 Identify Unit Specific Waste Acceptance Criteria

In addition to number 1 above the generator should review the unit specific waste acceptance criteria of the designated storage or treatment unit by contacting the unit owner or reviewing the Unit Specific Conditions outlined in Parts III and XVI respectively of this permit. Based on this information the generator should determine whether the waste to be transferred will satisfy the unit specific waste acceptance criteria

In addition to unit specific waste acceptance criteria for the units managed within this permit the Rocky Mountain Remediation Services Waste Acceptance Criteria document (RMRS WAC) also includes waste acceptance criteria for anticipated destination treatment or disposal facilities. When practicable the analysis of the waste should take into consideration the waste acceptance criteria for the destination off site treatment or disposal facility

3 Sampling and Analysis

If laboratory analysis is required a representative sample of the waste will be collected in accordance with Appendix I of 6 CCR 1007 3 Section 261. Section E of this Part provides a matrix of appropriate sampling methods

All samples will be submitted to the on Site laboratory or an RFETS approved off Site laboratory for analyses. The appropriate analytical methods are provided in Section F of this Part. Sample management quality control/quality assurance procedures are described in Section G of this Part

4 Transfer of Waste Analysis Information

Prior to waste transfer the generator will provide preacceptance information to the unit owner of the destination storage or treatment unit by one of the following means a Waste Processing Request Form Waste/Residue Traveler the Waste Acceptance Criteria and Hazardous Waste Information Forms and/or the WEMS. Regardless of how provided the information will contain at a minimum the following

information demonstrating that the waste complies with the unit specific waste acceptance criteria
the volume of waste to be transferred
the current location of the waste

5 Review by Unit Owner

Upon receipt of the waste characterization information the owner of the storage or treatment unit to which the waste will be sent will review the characterization and verify that the waste can be accepted at the unit according to the unit specific requirements

6 Frequency of Characterization Validation

Characterization of each hazardous waste stream to be sent to a storage or treatment unit will be validated according to the following guidelines

- a If the waste is a one time generation or if the waste is stored as backlog each waste stream will be validated in accordance with numbers 1 and 2 above. The generator may use process knowledge laboratory analysis or a combination of these to characterize the waste

- b If the waste is currently being generated from an on going process the unit owner will verify that the characterization information is current. Information will be current if it has been updated within 13 months. An update is either a confirmation that the waste stream has remained unchanged or new or modified characterization information.

C WASTE VERIFICATION

1 Waste Inspection

The unit owner will inspect the waste for the following as appropriate:
Discrepancies between the waste and the label(s) or markings
Discrepancies between the volume of the waste and the volume designated on the information supplied
Properly completed notification or certification statements
Container integrity

2 Response to Inconsistencies

If any inconsistencies are detected the unit owner will notify the generator of the inconsistencies and either not accept the waste or request additional information or analysis as necessary to resolve the inconsistency.

D POST TREATMENT ANALYSIS

Post treatment tests serve to assure that waste treatment is complete prior to transferring waste to the next treatment process to storage or off Site. Post treatment tests may include sampling of surrogate waste or actual waste from containers, tanks, pipelines, or pump taps, or continuous in line analysis. The sample location and frequency are specified in the Unit Specific Conditions for treatment units (Part XVI of this Permit) along with specific waste parameters and rationale.

E SAMPLING METHODS

Sampling methods used to collect hazardous waste samples at Rocky Flats comply with those described in Appendix I of 6 CCR 1007.3 Section 261 or an equivalent method as allowed in 6 CCR 1007.3 Section 264.13(b)(3). Sampling location, sample matrix, sample container type and size, and accessibility are taken into consideration when assigning a sampling method in order to ensure collection of a representative sample. Table IV.1 lists waste matrices and appropriate sample methods.

F ANALYTICAL METHODS

Specialized procedures have been developed at Rocky Flats to meet the technical requirements of analyzing certain wastes such as those containing radionuclides or compounds which interfere with the accuracy or precision of the analysis. These test methods are entitled L-Procedures. L-Procedures are based on test methods found in 6 CCR 1007.3 Part 261 "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods" EPA Publication SW 846 [Third Edition (November 1986) as amended by Updates I (July 1992) II (September 1994) and IIA (August 1993)]. Methods for Chemical Analysis of Water and Wastes EPA Publication No. 600/4-79-020 (1979) and various other EPA approved protocols such as those from the American Society of Testing and Materials (ASTM).

A list of L Procedures which deviate from SW 846 or other established methods such as those outlined in the DOE Methods for Evaluating Environmental and Waste Management Samples and a summary of the deviation has been submitted to the Division. Significant changes to those L Procedures will be submitted to the Division as a Class 1 permit modification prior to implementation of the change

G QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

The Permittee will maintain a Quality Assurance/Quality Control (QA/QC) program which at a minimum is in accordance with Test Methods for Evaluation of Solid Waste Physical/Chemical Methods EPA Publication SW 846 QA/QC procedures addressing waste characterization are maintained at the Site

H UNIT SPECIFIC REQUIREMENTS

Prior to accepting waste into the unit the unit owner will evaluate the parameters identified on each unit specific conditions sheet against the information provided by the generator prior to accepting the waste into the unit. Each storage unit specific conditions sheet contains at a minimum the following parameters

- Unit Number
- Preacceptance Waste Parameters and Rationale
 - EPA Hazardous Waste Code
 - Physical State (Free Liquids)
 - Ignitable or Reactive Status (including associated special management requirements)
 - Radiological Waste Type

Each treatment unit specific conditions sheet contains the above listed information plus the following

- Post Treatment Parameters and Rationale
- Post Treatment Sampling Location
- Post Treatment Sampling Frequency
- Post Treatment Analytical Methods

Compatibility codes are assigned to wastes in order to prevent unplanned mixing of incompatible wastes When assigning compatibility codes the Permittee will follow the guidelines established in 6 CCR 1007 3 Section 264 Appendix V

TABLE VI 1

MATRIX SPECIFIC SAMPLE METHODS	
MATRIX	SAMPLE METHOD
Aqueous	bailer bellows coliwasa, dipper pour pump thief weighted bottle, sample tap
Non aqueous liquid	bailer bellows coliwasa, dipper pour pump thief weighted bottle sample tap
Sludge	scoop shovel, grab (hands tongs tweezers etc)
Soil	grab (hand, tongs tweezers etc) scoop core trier
Granular materials	auger scoop thief trier core, grab (hand, tongs, tweezers, etc)
Cemented materials	core, grab (hand, tongs tweezers etc)
Combustibles	compact/core, grab (hand, tongs tweezers etc)
Paint	scraper chisel, grab (hand, tongs tweezers etc)

October 28 1996

342

PART VII PROCEDURES TO PREVENT HAZARDS

TABLE OF CONTENTS

A SECURITY	VII 1
1 Security	VII 1
2 Access Control	VII 1
3 Warning Signs	VII 1
B INSPECTION REQUIREMENTS	VII 1
1 Remedial Action	VII 2
2 Inspection Logs	VII 2
C PREPAREDNESS AND PREVENTION REQUIREMENTS	VII 2
1 Internal Communications	VII 2
2 Emergency Equipment	VII 3
3 Fire Control Equipment	VII 3
4 Testing and Maintenance of Equipment	VII 3
5 Aisle Space Requirements	VII 3
D PREVENTIVE PROCEDURES STRUCTURES AND EQUIPMENT	VII 3
1 Loading Unloading and Waste Transfer Operations	VII 3
2 Run-off and Run-on	VII 4
3 Water Supply Protection	VII 4
4 Mitigation of Effects of Equipment Failure and Power Outages	VII 4
5 Personnel Protective Equipment (PPE)	VII 4
6 Prevention of Releases to the Atmosphere	VII 4
E PREVENTION OF REACTION OF IGNITABLE REACTIVE AND INCOMPATIBLE WASTES	VII 5
1 General Waste Handling Precautions	VII 5
2 Management of Ignitable or Reactive Wastes	VII 5
a Containers	VII 5
b Tanks	VII 5
c Transport	VII 5
d Waste Transfer	VII 5
3 Management of Incompatible Wastes	VII 5
a Containers	VII 6
b Tanks	VII 6
FIGURE 1 TYPICAL WEEKLY INSPECTION LOG SHEET	VII 7
FIGURE 2 TYPICAL CONCURRENT INSPECTION LOG SHEET FOR VAULTS	VII 8
FIGURE 3 TYPICAL DAILY INSPECTION LOG SHEET FOR TANKS	VII 9

PART VII PROCEDURES TO PREVENT HAZARDS

The information provided in this section is submitted in accordance with the requirements of 6 CCR 1007 3 Part 100 41(a)(4) (5) (8) and (9) The section addresses the following

General security provisions

Inspection requirements

Preparedness and prevention requirements

Preventive procedures structures and equipment

Prevention of accidental ignition or reaction of ignitable reactive or incompatible wastes

A SECURITY

1 24 Hour Surveillance

A 24 hour electronic surveillance system monitors vehicle and personnel traffic at the Site's entry gates 24 hours each day Uniformed guards patrol the Site 24 hours each day

2 Access Control

Access to the Site is controlled by physical barriers guards and a personnel badging system Only personnel with permanent badges or approved visitors with temporary badges are allowed access to the Site Personnel must wear badges fully displayed at all times while at the Site

The Site is currently surrounded by barbed wire fence with access through two entry gates (one on the west side of the Site and one on the east side) Vehicle and personnel traffic through these gates is controlled 24 hours per day

The former production and support areas of the Site are currently surrounded by chain link fence topped with barbed wire Internal security areas within the fenced areas isolate classified information and nuclear materials Entry to the internal security areas is also controlled 24 hours per day

3 Warning Signs

All warning signs at the Site are printed in English and are visible from a distance of 25 feet and from all approach angles Warning signs indicating that the Site is a high security area are posted at Site entry gates and along the perimeter fence These signs state Authorized Personnel Only Keep Out

Warning signs are posted on or at the entrance(s) to all hazardous waste storage and treatment units These signs state Hazardous Waste and Danger! Unauthorized Personnel Keep Out (or equivalent) If ignitable wastes are stored or treated in the unit, a No Smoking sign is also posted

B INSPECTION REQUIREMENTS

Site personnel will conduct a variety of facility inspections on a regular basis in accordance with guidelines contained in the Site inspection plan

Equipment will be inspected to ensure that it is functioning and adequately maintained and that no discharges or leaks have occurred. Potential problems will be noted and appropriate remedial actions for specific problems will be identified.

1 Remedial Action

Potential problems noted during an inspection will be brought to the attention of the unit supervisor and prompt action will be taken to correct or mitigate the problem. Remedial actions will be completed in a timely manner to ensure that the problem does not lead to an environmental or human health hazard. The remedial actions taken will be documented on the inspection log where the problem was first noted.

2 Inspection Logs

Written inspection logs will be maintained by each hazardous waste management unit supervisor or designee. These logs will identify the inspector, date and time of inspection and specific items to be checked for each unit. Potential problems identified during inspections and the date that remedial action is completed will be noted on the inspection log.

Completed inspection logs will be kept at the unit or under the care of the unit supervisor or designee for at least three years. During an enforcement action by the Director or the Environmental Protection Agency, they will be kept for at least the duration of the enforcement action or for the time period indicated in a compliance agreement, if any.

Typical inspection log sheets for waste management facilities at the Site are provided at the end of this section of the Permit as Figures 1-3. They identify the specific items to be checked for each type of unit and also identify the applicable inspection frequency.

C PREPAREDNESS AND PREVENTION REQUIREMENTS

1 Internal Communications

All facility personnel will be able to request emergency assistance as needed. In facilities so equipped, personnel will use the telephone system or the fire phones to report emergencies. In remote locations (such as the main hazardous waste storage unit), personnel will use two-way radios for communications and emergency notification.

The fire alarm system and the Life Safety/Disaster Warning (LS/DW) public address system (where available) will be used to notify facility personnel of an emergency situation and provide immediate emergency instructions except in remote locations.

If the LS/DW system where present is not functional, an alternate means of communication will be used to notify personnel of emergency situations and to maintain contact. Finally, major buildings are equipped with an automatic fire suppression/detection and alarm system that will immediately and concurrently alert personnel at the Fire Department and the Site protection central alarm station when a fire is detected.

2 Emergency Equipment

Emergency equipment at the facility consists of fire control equipment spill response equipment and decontamination equipment Each permitted waste management unit and all individual areas within the unit in this permit will have emergency equipment available for emergency response Part VIII of this Permit provides specific information regarding the emergency response equipment available at the facility

3 Fire Control Equipment

a Water for Fire Control

Fire hydrants at the facility provide water of adequate volume and pressure for fire control A current list of fire hydrant locations will be maintained at the Site The Fire Department's pumper tank truck will be used to supply water for fire control in areas that cannot be reached via the fire hydrant system

Automatic sprinkler systems and fire extinguishers are located in buildings at the facility in accordance with National Fire Protection Association codes or an approved equivalent.

b Special Fire Fighting Equipment

Portable fire extinguishers are kept at the Site for responding to fires requiring a fire fighting agent other than water Special fire extinguisher availability (e.g. foam dry chemical and halon) is discussed in Part VIII the Contingency Plan of this permit

4 Testing and Maintenance of Equipment

All facility emergency communications and alarm systems fire protection equipment spill control equipment and decontamination equipment will be inspected and/or tested and maintained on a regular basis in accordance with the manufacturer's suggested frequency or other frequency in accordance with applicable Site Engineering standards

5 Aisle Space Requirements

Adequate aisle space will be maintained within units to allow for unobstructed movement of personnel and fire protection or spill control equipment in the event of an emergency Specific requirements are included in Parts III IV and V of this Permit

D PREVENTIVE PROCEDURES STRUCTURES AND EQUIPMENT

The facility currently maintains and implements general procedures that address health safety and environmental concerns related to facility operations

1 Loading, Unloading, and Waste Transfer Operations

On Site transportation of hazardous wastes will be performed in accordance with DOE approved Site specific transportation documents

Wastes being shipped or received will be kept on loading docks for less than 24 hours Following the use of any dock for the shipment or receipt of hazardous or mixed waste the dock will be checked for any signs of leakage from the waste containers

Loading and unloading areas will not be used for storage of hazardous or mixed wastes. When wastes are transferred from containers to tanks or container to container the containers will be open for only a minimal period of time to prevent spills or leakage. In addition precautions will be taken to ensure any spillage or leakage from equipment connections during waste transfers is contained appropriately.

2 Run-off and Run on

Site operations are designed to minimize the exposure of waste management units to run-on. Site drainage is designed to handle a 10 year 24 hour storm to ensure effective drainage during and immediately after precipitation events. All loading docks at the Site are raised and/or covered to prevent run on. Detailed information regarding the units subject to this requirement is provided in Part III of this Permit. The tank and liquid container storage units outside of buildings are located within impermeable berms to minimize contact with run-on and to prevent the migration of spilled material by run off transport.

3 Water Supply Protection

Containment will be provided for all units managing liquid waste to prevent contamination of domestic drinking water supplies resulting from waste spills. Natural drainage structures at the Site include a series of basins to contain spills in the event that other containment fails.

Releases of hazardous waste to soil or surface water at the Site will be controlled and cleaned up as quickly as possible to prevent the spread of contamination that could enter water supplies. Detailed information regarding the equipment and personnel available to ensure prompt spill clean up is provided in Part VIII of this permit. A surface water management plan including procedures to minimize the impact of hazardous waste releases to the Site surface water control system will be maintained at the Site.

4 Mitigation of Effects of Equipment Failure and Power Outages

Appropriate facility personnel will be trained for inspection of equipment and emergency procedures to ensure that appropriate action is taken in the event of equipment failure. Emergency power systems at the Site will be available as back up power sources during power outages if required. The emergency power system will be activated after a power failure to minimize the effects of the power failure and ensure that hazardous wastes are not released to the environment. A description of the emergency power system is provided in Part VIII of this permit.

5 Personnel Protective Equipment (PPE)

Employee health and safety issues for activities involving the handling of hazardous and/or mixed wastes will be evaluated and addressed prior to activity startup. Each permitted unit will keep PPE in storage for both routine operations and release response efforts or will have the equipment readily available for use. Additional information regarding PPE is provided in Part VIII of this Permit.

6 Prevention of Releases to the Atmosphere

Spill prevention is the primary means of preventing releases to the atmosphere. Spill prevention will be facilitated by routine inspection procedures and safe handling practices for loading, unloading, and transferring waste.

If a spill occurs prompt response and clean up actions will ensure minimal releases of hazardous substances to the atmosphere. Detailed information regarding the equipment and personnel available to ensure prompt spill clean up is provided in Part VIII of this Permit.

E PREVENTION OF REACTION OF IGNITABLE REACTIVE AND INCOMPATIBLE WASTES

1 General Waste Handling Precautions

General waste handling precautions at the facility will include the segregation of incompatible wastes in cargo containers or areas of buildings and not allowing ignition sources near ignitable waste. The strategy used at the Site to identify ignitable reactive and incompatible wastes is presented in Part VI of this Permit.

2 Management of Ignitable or Reactive Wastes

Personnel involved with management storage handling or transport of ignitable or reactive wastes will be trained to recognize conditions with the potential for fire explosions and dangerous reactions.

a Containers

Ignitable and reactive wastes will be separated from sources of ignition. Waste containers used for the accumulation or storage of ignitable or reactive wastes will be placed away from machines that could spark and areas will be posted with No Smoking signs.

b Tanks

Sources of ignition or sparks will be kept away from ignitable and reactive waste storage tanks and the areas will be posted with No Smoking signs.

c Transport

Special precautions will be taken during loading unloading and on site transport of ignitable wastes. Precautions to ensure a non sparking environment will be taken when handling ignitable wastes. When ignitable or reactive wastes are transported on site they will be physically separated and segregated from incompatible wastes to ensure no commingling of wastes will occur in the event of a spill or release during transport.

d Waste Transfer

Precautions to be taken during waste transfer operations include the grounding of containers and tanker trucks involved in the transfer of waste. Ignitable waste containers will be open for only a minimal period of time to reduce fire or explosion hazards.

3 Management of Incompatible Wastes

The facility's hazardous waste management training program addresses measures to prevent ignition or reaction of wastes and to prevent uncontrolled mixing of incompatible wastes.

For certain waste treatment processes (e g neutralization by mixing acidic and basic wastes) intentional mixing of incompatible wastes will be conducted in a controlled manner

a Containers

Incompatible wastes in containers will be separated by several means which are identified in Part III of the Permit.

b Tanks

The operator practices used to avoid mixing of incompatible wastes in tanks are described in Part IV of this Permit.

FIGURE 1
TYPICAL RCRA PERMITTED CONTAINER STORAGE
UNIT WEEKLY INSPECTION LOG SHEET

Building _____ Permitted Unit No _____
 Inspector _____ Date _____ Time _____

CHECK EACH OF THE FOLLOWING WHICH ARE APPLICABLE. YES NO N/A

A For All Container Storage Units

- | | | | | |
|---|--|-----|-----|-----|
| 1 | Unit free of evidence of leaks or releases? | ___ | ___ | ___ |
| 2 | Containers placed properly (e g stacked properly)? | ___ | ___ | ___ |
| 3 | Adequate aisle space present within unit?
Aisle space for this unit is _____ inches | ___ | ___ | ___ |
| 4 | Containers free of excessive corrosion and/or deterioration? | ___ | ___ | ___ |

B For Units Storing Liquid Waste

- | | | | | |
|---|--|-----|-----|-----|
| 1 | Lack of evidence of damage to secondary containment which could impair the effectiveness or integrity of the system? | ___ | ___ | ___ |
|---|--|-----|-----|-----|

C For Storage Units Located Outside

- | | | | | |
|---|--|-----|-----|-----|
| 1 | No incidental precipitation within containment? | ___ | ___ | ___ |
| 2 | Lack of evidence of seepage of waste outside of containment? | ___ | ___ | ___ |

REMEDIAL ACTIONS

Always notify supervision of any problems
 Any No response requires the following be included in the Comments section

- a) Explanation of problem
- b) Description of corrective action taken, and
- c) Date corrective action was taken.

COMMENTS.

350

FIGURE 2

**TYPICAL CONCURRENT RCRA INSPECTION
LOG SHEET FOR VAULTS**

Date _____ Time _____ Inspector _____

Building _____ Room _____ Unit No _____

The following log sheet must be filled out completely and accurately. Inspections shall be performed in conjunction with regularly scheduled nuclear material accountability inspections.

Container #	RCRA	Container #	RCRA	Container #	RCRA	Container #	RCRA

Inspect for the following.

YES NO

- 1 All containers in good condition (free of corrosion, buckles, dents, holes, or damaged seams)?

REMEDIAL ACTIONS

Always notify supervision of any problems. Any "No" answers require an explanation and/or corrective action in the Comments section.

COMMENTS

351

FIGURE 3

**TYPICAL RCRA PERMITTED TANK STORAGE
UNIT DAILY INSPECTION LOG SHEET**

BUILDING					
ROOM					
UNIT ID NO					
DATE					
TIME					
INSPECTOR SIGNATURE					

The following log sheet must be filled out completely and accurately The only acceptable responses are Yes No or NA

1	Lack of evidence of leakage from the tank system?					
2	Is secondary containment system in good condition free of cracks gaps or chips which could impair its ability to provide containment?					
3	Is the tank system in good condition free of corrosion or deterioration which could compromise its integrity?					
4	Is overfill prevention equipment functioning properly?					
5	If tank monitoring equipment is present is it operating properly?					

REMEDIAL ACTIONS

Always notify supervision of any problems Any No answers require an explanation and/or corrective action in the Comments section

COMMENTS

PART VIII CONTINGENCY PLAN

TABLE OF CONTENTS

A	PURPOSE	VIII 1
B	INCIDENT CATEGORIZATION AND INITIAL RESPONSE	VIII 1
1	Response to Non Emergency Incidents	VIII 2
2	Response to Emergency Incidents	VIII 2
C	CONTINGENCY PLAN IMPLEMENTATION	VIII 3
D	EMERGENCY COORDINATORS	VIII 3
E	EMERGENCY PROCEDURES	VIII-4
1	Emergency Coordinator	VIII-4
2	Responsible Manager	VIII 5
3	Permittee	VIII 6
F	EVACUATION PLAN	VIII-6
G	COORDINATED EMERGENCY SERVICES	VIII-6
H	EMERGENCY EQUIPMENT	VIII 7
1	Fire Control Equipment	VIII 7
2	Spill Response Equipment	VIII 7
3	Decontamination Equipment	VIII 7
4	Medical Facilities	VIII 8

ATTACHMENTS

1	Emergency Response Contacts	VIII 9
----------	------------------------------------	---------------

PART VIII CONTINGENCY PLAN

A PURPOSE

Incident response actions at the Rocky Flats Environmental Technology Site (Site) are governed by two documents. For non emergency incidents the Occurrence Reporting Process Procedure (ORPP) is used while the Site Emergency Plan (EPLAN) is used for response actions to incidents categorized as emergencies.

Non emergency incident response is conducted in accordance with the ORPP which is maintained by the Occurrence Notification and Reporting Organization at the Site. It provides Site personnel with a method for categorizing and reporting non-emergency incidents that occur within their area. Since response actions to incidents categorized as non-emergency may differ depending on the affected building or area the ORPP does not provide specific response actions. Specific response actions are conducted in accordance with building or area procedures.

Emergency response actions at the Site are governed by the EPLAN. The EPLAN is maintained by the Emergency Preparedness organization at the Site. The EPLAN provides an overview of the Site Emergency Response Organization and the roles and responsibilities of its members to develop, prepare, implement and maintain the capability to respond to and mitigate the effects of hazards associated with emergencies, to direct protective actions for workers and Site visitors, to notify off site officials and provide protective action recommendations for the public, to limit adverse impacts to the environment and to use the as low as reasonably achievable principle for hazard exposure limits for workers responding to the emergency. This Contingency Plan supplements the EPLAN for incidents which directly involve hazardous waste or hazardous waste constituents which could endanger human health or the environment.

Even though the ORPP and the EPLAN are referenced in this section of the permit, it is not intended that either document become part of the permit. Also, any changes incorporated into the EPLAN that do not specifically impact the implementation of the Contingency Plan will not be reported to the Division (this is limited to the EPLAN since the ORPP has no impact on the implementation of the Contingency Plan). On the other hand, any changes in the EPLAN that do impact the implementation of the Contingency Plan will be reported to the Division in writing prior to the incorporation of the change into the EPLAN.

B INCIDENT CATEGORIZATION AND INITIAL RESPONSE

All incidents at the Site are categorized based on their extent, impact on normal or safe operations, threat posed to human health and the environment, and the actions and personnel necessary for mitigation and remediation. When discovered, an incident is reported to building/area management. If building/area management is not available, the incident may be reported to emergency personnel through the Site emergency phone number (X2911) or directly to the Shift Superintendent at extension 2914. Following the completion of required initial notifications, building/area management will assess the incident, categorize it, and provide direction for its mitigation (if possible through the utilization of area equipment and personnel). If the incident is categorized as an emergency, initial response actions are conducted to isolate the area and ensure area personnel are made aware of the situation and do not unknowingly enter the affected area.

1 Response to Non Emergency Incidents

If the incident is categorized as a non-emergency response actions are conducted at the building level in accordance with approved Site procedures. The following examples are considered non-emergency incidents that would not require implementation of the Site Contingency Plan

- a) Release of a hazardous or mixed waste to secondary containment that is determined to be less than a reportable quantity pursuant to 40 CFR 302.6 (RQ) that is cleaned up within 24 hours. If the release to secondary containment is not cleaned up within 24 hours the incident will be recategorized as an emergency and the Contingency Plan will be implemented
- b) A release of hazardous or mixed waste within a building structure or area that is less than an RQ and is determined not to threaten human health or the environment
- c) A fire or explosion of a controllable nature in a regulated waste management area that activates a fire suppression system (e.g. halon discharge, sprinkler heads) will not cause the release of vapors to the environment in excess of an RQ above authorized release levels. Has been determined to not be a threat to human health or the environment and is extinguished utilizing available equipment following the arrival of fire protection personnel
- d) An incident in a hazardous or mixed waste management area causing personal injury requiring only minor first aid treatment.

Non emergency incidents require timely response of personnel assigned to the affected area (incidental response) for mitigation, clean up or attention. Emergency units and personnel external to the area in which the incident occurs are not typically involved in response to this type incident although fire protection personnel will respond to the area if fire detection equipment is activated as a result of the incident. Acceptable personal protective equipment (PPE) for responding to a non emergency incident is normal work area clothing and equipment. This may include higher levels of PPE and spill response equipment maintained at or near the affected waste management unit. Area personnel respond to these incidents in accordance with area specific procedures and direction from area supervision.

When notified of the incident and the initial categorization the Shift Superintendent monitors response activities to ensure additional resources are made available should the need arise. Should it be deemed necessary the Shift Superintendent may recategorize the incident as an emergency at any time to initiate more vigorous response actions. If this were to occur all required notifications and documentation would be carried out in accordance with the EPLAN.

2 Response to Emergency Incidents

Incidents that present a threat to human health and the environment are categorized as emergencies and are managed in accordance with the EPLAN. Included in the EPLAN is the Contingency Plan whose implementation occurs when emergency incidents involving hazardous or mixed waste require response in accordance with the EPLAN. The following hazardous and mixed waste incidents are considered emergencies requiring implementation of the EPLAN and the Contingency Plan

- a) A release of hazardous or mixed waste that may threaten human health or the

environment. Any release of hazardous or mixed waste that meets or exceeds an RQ will result in the implementation of the EPLAN. For releases that do not meet or exceed the RQ a determination will be made based on available information regarding the potential threat to human health and the environment. The results of the determination will be documented as required in the EPLAN.

- b) A hazardous or mixed waste incident resulting in a fire or explosion that threatens human health or the environment and/or leads to the release of radioactive and/or hazardous constituents in excess of an RQ above an authorized release
- c) A hazardous or mixed waste incident resulting in injuries to personnel who then require hospitalization
- d) Releases of less than an RQ of hazardous waste to secondary containment that is not cleaned up within 24 hours of the time of discovery

For incidents categorized as an emergency that involve hazardous and/or mixed waste the EPLAN and the Contingency Plan will be implemented

C CONTINGENCY PLAN IMPLEMENTATION

Implementation of the Contingency Plan results from the categorization of a hazardous or mixed waste incident as an emergency (see B 2 above). Non emergency hazardous or mixed waste incidents do not necessitate implementation of the Contingency Plan (see B 1 above). Emergency incidents are managed in accordance with the EPLAN. If an emergency incident occurs that includes hazardous or mixed waste or regulated waste management areas the Contingency Plan is implemented in accordance with the EPLAN.

D EMERGENCY COORDINATORS

At the Site a Shift Superintendent is on duty at all times and acts as the Emergency Coordinator (EC). The Shift Superintendent must have a minimum of 15 years experience at the Site and have extensive knowledge of the Site. They must have an engineering degree or equivalent and must have previous management experience. These individuals receive standard Site training (e.g. Conduct of Operations, Radiation Worker Level II, 40 Hour OSHA training, DOT Awareness, Respirator training, etc.) and additional training to act as a first responder for hazardous waste incidents. In the event of an emergency incident the EC is responsible for the implementation and coordination of the Contingency Plan. The EC is responsible for the initiation of sitewide response to emergencies and may also function in a similar capacity under the EPLAN.

In the event of an Operational Emergency as defined in the EPLAN the EC is required to assume the role of the Incident Commander (IC). In these capacities the EC has full authority to enlist all available Site resources and those discussed in Section H of this part to mitigate any emergency situation.

Per Site procedures the EC is notified of all incidents at the Site. The EC relies upon incident descriptions (non emergency or emergency), professional judgement and input from personnel in the affected area to determine whether the conditions of B 2 exist requiring implementation of the Contingency Plan.

Only the EC may implement the emergency procedures of the Contingency Plan. All other actions outlined in the Contingency Plan may be performed by others (e.g. Crisis Manager).

Senior Fire Protection Officer Senior Security Officer) as delineated in the EPLAN. However, it remains the responsibility of the EC to ensure that the emergency procedures outlined in the Contingency Plan are completed.

In the event of an emergency, the Site EC will determine whether to activate the Emergency Operations Center (EOC). The EOC is staffed by teams of individuals from various disciplines at the Site who are assembled in time of emergency to evaluate an incident from their varied perspectives and ensure that response to an emergency incident is properly evaluated, coordinated, and implemented. In the event of an emergency, the EPLAN will be used to manage the activities of those charged with guiding the response measures. Periodic drills at the Site are conducted to ensure prompt and appropriate response actions are conducted. The regulatory requirements of the Contingency Plan for notification of local and national authorities are incorporated in response activities conducted as part of the EPLAN.

In the event of an emergency, the Site EC can be contacted by dialing extension 2911 from on site or (303) 966 2911 from off site (the Site emergency telephone number) or contacted directly by dialing extension 2914 from on site or (303) 966 2914 from off site. Additionally, Site personnel are trained to alert emergency personnel by lifting the receiver of a fire phone and leaving it off the hook. This automatically alerts the fire department of an incident and its location. In this manner, personnel unable to call the Shift Superintendent directly can notify emergency personnel of an incident requiring response without remaining in the area of the incident.

E EMERGENCY PROCEDURES

In the event of an emergency incident, the personnel and entities listed below have the following responsibilities:

1 Emergency Coordinator (EC)

The EC will ensure that the following actions are completed in accordance with existing Site policies, procedures, and plans (e.g., EPLAN and Contingency Plan) as appropriate:

- a activate internal Site alarms or communication systems where applicable to notify affected Site personnel of the emergency
- b notify appropriate State and local agencies of the emergency (a list of Federal, State, and local agencies to be contacted is provided at the end of the Contingency Plan as Attachment 1)
- c identify the character, exact source, amount, and areal extent of any released materials by utilizing observation, process knowledge, records review, or chemical analysis
- d assess possible hazards to human health or the environment that may result from the incident, including indirect effects of the release, fire, or explosion
- e determine whether the incident could threaten human health or the environment outside the Site
- f immediately notify appropriate local authorities if evacuation of local areas is advisable

- g immediately notify the National Response Center (NRC) at 1 800-424 8802 if the release of hazardous or mixed waste is equal to or exceeds an RQ or human health or the environment outside the Site is threatened and report the following
- i name and telephone number of reporter
 - ii name and address of Site
 - iii time and type of incident,
 - iv name and quantity of material(s) involved to the extent known
 - v the extent of injuries if any and
 - vi the possible hazards to human health or the environment outside the Site
- h Take all reasonable measures necessary to ensure that fires explosions and releases do not occur recur or spread to other hazardous waste at the Site These measures must include where applicable stopping processes and operations collecting and containing released waste and removing or isolating any containers threatened by the incident or impeding response activities
- i If hazardous waste operations at the Site are stopped in response to a fire explosion or release then monitor for leaks pressure buildup gas generation or rupture in valves pipes or other equipment as appropriate Prior to the restart of any operations that are stopped the Permittee will provide notification to the CDPHE Hazardous Materials and Waste Management Division (HMWMD) representative via facsimile
- j Provide for the treatment storage or disposal of recovered waste contaminated soil or surface water or any other material that resulted from the incident within two weeks of the incident (14 calendar days)
- k Ensure that in the affected area(s) of the Site
- i No waste that may be incompatible with the released material is treated stored or disposed of until cleanup procedures are completed
 - ii Emergency equipment is cleaned and fit for its intended use before hazardous waste operations are resumed
 - iii Following the receipt of the notification from the responsible manager identified in section E 2(b) of this Part provide notification to CDPHE Hazardous Materials and Waste Management Division (HMWMD) representative via facsimile that post emergency equipment maintenance has been completed

2 Responsible Manager

Responsibilities of the manager of the affected area include the following

- a Note in the operating record the time date and details of the incident.
- b Notify the EC that area(s) of the Site affected by the incident are in compliance with section VIII F(1)(k)(i) and (ii) of this part and that operations discontinued as a result of the incident are to be restarted prior to resuming operations in the affected area(s)

3 Permittee

- a Within 15 days submit a written report on the incident to the Division The report must include
 - i name address and telephone number of the owner operator or co operator
 - ii name address and telephone number of the Site
 - iii date time and type of incident (e g release fire explosion)
 - iv name and quantity of material(s) involved
 - v the extent of injuries if any
 - vi an assessment of actual or potential hazards to human health or the environment, where applicable and
 - vii estimated quantity and disposition of recovered material that resulted from the incident.

F EVACUATION PLAN

Evacuations of buildings or areas at the Site are conducted in accordance with applicable building or area procedures or instructions provided by building or area management. Site personnel are provided with facility specific training regarding evacuation notification, primary and alternate evacuation routes facility hazards and assembly areas Maps detailing both primary and alternate evacuation routes or designated assembly areas are posted at entrances to each building or area Drills are conducted periodically to ensure Site personnel are familiar with the evacuation routes

In the unlikely event emergency conditions warrant the evacuation from the entire Site the evacuation will be carried out in accordance with the Winter Storm Contingency/Interim Site Evacuation procedure which is maintained by the Emergency Preparedness organization

Site personnel will be notified via the Life Safety/Disaster Warning (LS/DW) system two way radios and/or the internal telephone system and provided with information regarding best routes and methods of transportation for conducting the evacuation

G COORDINATED EMERGENCY SERVICES

Coordinated emergency services support is established through formal Memoranda of Understanding (MOU) and Mutual Aid Agreements (MAA) with the following

Medical University of Colorado Health Sciences Center (MOU) St Anthony Hospitals (MOU)

Fire support Jefferson County HAZMAT Authority (MAA) Coal Creek Fire District (MAA) Westminster Fire and Rescue (MAA)

Security Colorado State Patrol (MOU) Jefferson County Sheriff (MOU) Federal Bureau of Investigation (MOU)

Alternate Emergency Operations Center- Federal Emergency Management Agency Region VIII (MOU)

These agreements undergo an annual review and are normally effective for a period of five years or as modified earlier by request of either signatory. The Mutual Aid Agreements and Medical MOUs contain provisions for the availability of ambulance and Flight for Life support including provisions for the immediate transport of radioactively contaminated individuals. Copies of these formal agreements are appended to the EPLAN. Activities related to joint emergency response planning are facilitated through the Joint Planning Team conducted under the direction of the Colorado Department of Public Health and Environment Emergency Management Program.

H EMERGENCY EQUIPMENT

The emergency equipment available at the Site at a minimum meets the requirements of 6 CCR 1007.3 Section 264.32 and 265.32. A description of the emergency equipment follows:

1 Fire Control Equipment

The Site operates a fully staffed fire department for on-site emergency response. The majority of the Site's fire fighting equipment is located at the on-site Fire Department (Building 331). A listing of all fire control equipment including location and capability is maintained by the Fire Protection Engineering and Fire and Emergency Services organizations and is updated regularly. This information is available for review at all times.

2 Spill Response Equipment

Spill control equipment is maintained by the Fire Department HazMat unit. Details on the Fire Department's hazardous materials response program are contained in Site Fire Department standard operating procedures. A listing of the Department's spill control equipment is maintained by the Fire and Emergency Services organization and is available for review at all times.

In addition, all areas where hazardous waste is generated, accumulated, stored, or treated have adequate spill control equipment and/or supplies available to respond to a non-emergency release. A list of the spill response materials accessible to each unit is maintained at or near the waste management unit.

3 Decontamination Equipment

Decontamination facilities are located in various buildings at the Site including the following: Buildings 122, 371, 707, 771, 776/777, 779, and 881. The decontamination facilities are maintained with monitoring equipment, showers, and decontamination materials. Eyewash stations and safety showers are located throughout the Site. In

360

addition, the HazMat van and trailer are equipped with decontamination pools

4 Medical Equipment

A medical facility is present at the Site (Building 122) to provide medical services to Site personnel. The Site maintains a staff of medical doctors, registered nurses, and Emergency Medical Technicians (EMTs) to provide medical services on a 24 hour basis. Doctors and nurses are available on day shift with EMTs providing the remainder of the coverage. The medical facility has primary treatment stations for initial emergency care. Personnel who have sustained more serious injuries will be transported to designated local area hospitals that are prepared to accept both contaminated and uncontaminated personnel. Ambulances are also present at the Site and are equipped with communications equipment allowing contact with local hospitals and Site emergency personnel.

Site personnel are provided with Site and facility specific training to identify the locations of emergency equipment for proper response to incidents and alarms and incident reporting requirements. This training is conducted when personnel are assigned to a new or different area of the Site and regularly thereafter during the assignment.

CONTINGENCY PLAN ATTACHMENT 1
EMERGENCY RESPONSE CONTACTS

Federal

U S Environmental Protection Agency
Region VIII
(303) 293 1788 (24 hours)

EPA/National Response Center
Washington D C
(800) 424 8802 (24 hours)

State

Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver CO 80222 1530
(303) 756-4455 (24 hours)

Hazardous Materials and Waste Management Division
(303) 692 3300 (business hours)

Water Quality Control Division
(303) 692 3500 (business hours)

Air Pollution Control Division
(303) 692 3100 (business hours)

Colorado Emergency Planning Committee
4300 Cherry Creek Drive South
Denver CO 80220
(303) 756-4455 (24 hours)

Local

Broomfield Public Works Dept
6 Garden Center
Broomfield CO 80020
(303) 469 3301 ext 364 (business hours)
(303) 469 2345 (police after hours)

Jefferson Co Health Department
260 South Kipling
Lakewood CO
(303) 239 7097

Boulder Co Emergency Planning Comm
(303) 441 3390 (business hours)

Jefferson Co Emergency Planning Comm
(303) 271 8215

Northglenn Water Department
(303) 451 1289

Westminster Water Department
4800 W 92nd Ave
Westminster CO 80030
(303) 430 2400 ext 2447

Thornton Water Department
(303) 538 7422 (business hours)
(303) 528 7245 (24 hours)

PART IX PERSONNEL TRAINING

TABLE OF CONTENTS

A	INTRODUCTION	IX 1
B	RCRA TRAINING OVERVIEW	IX 1
1	Site Training Matrix	IX 1
2	Environmental Professional Training	IX 1
3	Training Delivery	IX 2
4	Training Frequency	IX 2
5	Training Effectiveness Evaluation	IX 2
6	Records	IX 2
7	Area Specific Training	IX 3
C	RCRA TRAINING OFFICER	IX 4
D	RESPONSIBILITIES	IX 4
1	RCRA Training Officer	IX 4
2	Line Management	IX-4
3	Waste Management Personnel	IX 4
E	RCRA TRAINING OVERSIGHT	IX 5
F	RECORDS MANAGEMENT	IX 5

PART IX PERSONNEL TRAINING

A INTRODUCTION

The Rocky Flats Environmental Technology Site (Site) RCRA training program is designed to ensure that individuals generating or managing hazardous or mixed waste are trained to perform their work and meet the requirements of the Colorado Hazardous Waste Regulations (6 CCR 1007 3) Parts 100 41(a)(12)

To identify the training an employee requires a matrix of job classifications and training requirements has been developed for Site personnel responsible for the generation or management of hazardous or mixed waste. The Site RCRA Personnel Position Descriptions To Required Initial & Continuing Training Matrix (Site Training Matrix) which has been included as Appendix A to this section, provides job descriptions (position function) typical job tasks associated with each position function and defines the required initial and continuing training for each position function.

Appropriate Department of Energy (DOE) contractor and subcontractor personnel will be provided classroom and on the job training within six months of job assignment or reassignment. Personnel will not be allowed to work in unsupervised positions until they have satisfactorily learned hazardous waste management procedures including contingency plan implementation

B RCRA TRAINING OVERVIEW

1 Site Training Matrix

The specific training requirements for personnel at the Site involved in the generation or management of hazardous or mixed waste are identified in the Site Training Matrix provides job groupings (position function) for Site personnel involved in the generation or management of hazardous or mixed waste tasks performed as a part of each position function the required initial and continuing training, and course information. The document allows the user to check on a particular job or associated task and to determine the required training

Administrative and other Site personnel not directly involved in the generation or management of hazardous or mixed waste are not included in the Training Matrix. Their training requirements are dependent on their job duties and job location. These individuals receive general employee training which includes information on emergency response and notification but do not receive the training that personnel involved in the generation and management of hazardous or mixed waste require

The training requirements identified in the Site Training Matrix were developed to address both normal and emergency operations for each job description. This ensures that personnel are trained to perform the tasks within their job classification and are able to respond correctly and effectively to emergencies. The primary elements of the training program are

2 Environmental Professional Training

Environmental Professionals will attend annual two-day seminars where changes in Site management practices and requirements as well as changes in regulations will be discussed in detail. Environmental Professionals include Environmental Program

364

Managers Environmental Technical Advisors Environmental Managers and Environmental Program personnel Some Environmental Professionals have duties described in the Site Training Matrix In this case successful participation in the seminar described above will supersede the requirement for an Environmental Professional to complete annual RCRA update training

3 Training Delivery

Training may be delivered by computer classroom presentation briefings and/or classroom instruction that can include computer based instruction and OJT

Additionally Site Conduct of Operations procedures dictate that personnel attend briefings and job walkdowns prior to performing work in nuclear facilities During these sessions additional OJT is provided as involved personnel discuss waste to be generated characterization of the waste and associated management requirements

4 Training Frequency

All personnel with job responsibilities involving the generation or management of hazardous or mixed waste will be provided general RCRA training on an annual basis Individuals must be retrained within one month of the expiration date of their previous training to meet the requirement for annual retraining These individuals are also provided with area specific training by their supervision

The area specific training is developed from briefings provided to supervisors and designated trainers on an annual basis From briefing materials area specific training for area personnel is developed The supervisors or designated trainers then present applicable portions to workers in their areas of responsibility In this manner the unique circumstances or requirements of an area can be addressed

5 Training Effectiveness Evaluation

Training materials training sessions and course content are periodically evaluated by both the participants and independent training auditors The findings from evaluations are provided to the organization responsible for the training This information is used in the maintenance of the program materials including course material handouts and tests which are updated as necessary to reflect current requirements

6 Records

All training records are managed in accordance with the regulatory requirements for record maintenance and retention

7 Area Specific Training

Area specific emergency response training is provided by line management in the specific area of assignment while general Site emergency training is provided in classroom training sessions

Area specific training familiarizes each employee with the emergency procedures emergency equipment, and emergency systems of the Site and their specific area of assignment. Specific training is provided for the following areas

- a Facility Emergency and Monitoring Equipment

Facility monitoring equipment is used to monitor the current condition of equipment and the work environment. If changes to normal conditions occur that require the attention of area personnel the monitoring equipment will provide notification by audible or visual alarm. Facility emergency equipment is used by area and Site personnel to respond to anomalous situations if/when they arise. Personnel are trained concerning the presence of this equipment, its importance and their responsibilities (if any) for observing and obtaining information from it. Additionally personnel are provided with area specific training in the procedures for using inspecting repairing and replacing facility emergency and monitoring equipment. This includes identifying the locations and capabilities of this equipment within an assigned area method and frequency of equipment inspections how and whom to notify of an equipment malfunction, and methods of remediating or mitigating an equipment malfunction.

b Automatic Waste Feed Cut Off Systems

For areas in which this equipment is present, personnel are trained on the location of the equipment and its capabilities. They also are instructed on the use of the equipment to ensure its proper function for normal operations and for emergencies.

c Communications or Alarm Systems Response to Fires or Explosions

All personnel subject to this training plan are trained on the appropriate response to incidents including fires and explosions in their work area. Personnel assembly areas are defined for all work areas and alarm systems for areas are described and their functions and signal mechanisms explained.

Area specific training is provided on the presence of special alarms in an area (e.g. high level alarms Selective Alpha Air Monitors (SAAMs) glovebox overheat alarms) and responses to them. Personnel are trained on area or facility communication systems to identify any unique attributes or conditions which may affect the performance of the system and/or any area specific requirement for additional or alternate evacuation routes and methods of communication (e.g. the use of two way radios).

d Response to Environmental Contamination Incidents

Personnel subject to this training plan are trained in the specific hazards present within their work areas. They are also instructed on the proper response to possible or actual releases to the environment from their work areas evacuation routes and notification requirements.

e Shutdown of Operations

Personnel are trained in the proper shutdown of operations and equipment for routine and non routine situations.

For routine situations personnel perform shutdown in accordance with approved procedures.

For non routine situations personnel are instructed to place the operation or equipment in a safe configuration or how and when to abandon the operation or equipment depending on the severity of the incident necessitating shutdown and/or the threat to their well being.

C RCRA TRAINING OFFICER

The RCRA Training Officer is the designated individual responsible for administering the RCRA Training Program and has responsibility for the day to day maintenance and implementation of the RCRA Training Program. The RCRA Training Officer must be trained in hazardous waste management regulations requirements and procedures and is responsible for the approval of all phases of development, maintenance delivery and evaluation of the Site RCRA Training Program and verification that appropriate training records are maintained.

D RESPONSIBILITIES

1 RCRA Training Officer

The responsibilities of the RCRA Training Officer include the following

- a administers the RCRA Training Program
- b ensures that the Training Matrix course content, and class materials are current,
- c ensures that training records are properly maintained and

2 Line Management

The responsibilities of Line Management include the following

- a ensure that any person performing a task that involves the generation or management of a hazardous or mixed waste has successfully completed all required training
- b ensure personnel are trained within six months of initial assignment or reassignment, and retrained annually thereafter and
- c ensure that until initial training is provided the worker is supervised in the performance of his/her job tasks

3 Waste Management Personnel

Personnel at the Site have the following responsibilities regarding their training

- a ensure that they are appropriately trained for assigned job tasks that include the generation or management of hazardous or mixed waste
- b maintain a copy of training certificates and
- d notify line management when they believe their training may not be current

The responsibilities provided above for the specified individuals are part of their job descriptions. Each employee is responsible for ensuring compliance with training requirements.

E RCRA TRAINING OVERSIGHT

Oversight of the various training activities at the Site is provided by the Training and Qualification and Quality Assurance departments of the integrating management contractor. The Training and Qualification department is responsible for the integration of various Site training programs and oversees the implementation and performance of the training programs in place at the Site. The Quality Assurance department is responsible for providing periodic audits and evaluations of the training programs to ensure that the quality objectives are continually met.

Training oversight is conducted to ensure that training being delivered to Site personnel is adequate, current, controlled, and effective. It is also used to ensure that record generation and maintenance is adequate.

F RECORDS MANAGEMENT

Training records at the Site are maintained in accordance with Site procedures for records management. Compliance with Site procedures ensures that regulatory requirements for training record retention are met. Records documenting training of active Site personnel are maintained at the Site indefinitely. Training records for personnel who are no longer active Site employees are maintained at the Site or archived off site in retrievable storage. Archived records are placed into 75 year storage.

February 6, 1997

IX 5

368

PART X CLOSURE

TABLE OF CONTENTS

A	INTRODUCTION	X 1
B	GENERAL CLOSURE INFORMATION	X 2
1	Closure Plan	X 2
2	Content of the Closure Plan and Closure Description Document	X 2
3	Facility Closure Notification	X 3
4	Closure Schedule	X 3
5	Sequence of Activities for Closure	X 3
6	General Closure Activities	X-4
7	Recordkeeping	X 6
8	Amendment of Closure Plan	X 6
C	CLEAN CLOSURE BY DECONTAMINATION	X 6
1	Waste Inventory Removal	X 7
2	Contaminant Evaluation	X 7
3	Decontamination	X 7
4	Decontamination Activities	X 8
5	Decontamination Residuals and Rinsate Management	X 9
6	Closure Performance Standard	X 9
7	Soil Contamination Evaluation	X 10
D	'DEBRIS RULE DECONTAMINATION	X 10
1	Waste Inventory Removal	X 10
2	Contaminant Evaluation	X 10
3	Decontamination Options	X 10
4	Decontamination Activities	X 11
5	Decontamination Residuals Management	X 11
6	Closure Performance Standard	X 11
7	Soil Contamination Evaluation	X 12
E	RCRA STABLE	X-12
1	Waste Removal	X 12
2	Eliminate Future Waste Input	X 12
3	Unit Management	X 13
4	Removal of Unit	X 13
F	SOIL CONTAMINATION	X 13
G	CORRECTIVE ACTION	X 14
H	POST CLOSURE CARE REQUIREMENTS	X 14

PART X CLOSURE

A INTRODUCTION

This section of the Permit addresses closure of all hazardous and mixed waste container storage tank storage and treatment units specifically identified and described in Parts III IV and V of this Permit (permitted units) General closure information is contained in Section B while information regarding the specific activities to be conducted for closure of the permitted unit is identified in Sections C D and E of this Part. All closure activities for permitted units will be conducted in a manner that protects human health and the environment and in accordance with this Part X of the Permit that is the Closure Plan for the Site

The Rocky Flats Environmental Technology Site (Site) is planning to accomplish clean closure of all permitted units Soil contamination from permitted units found during closure activities that is impracticable to excavate or treat (if any) will be addressed through a modification of the Closure Plan to meet in place closure standards The scheduling of closure activities will be coordinated consistent with the integrated management and prioritization of all Site activities through the RFCA annual budget planning process (ISB)

There are two scheduling scenarios for closure of permitted units

- 1 closure independent of cleanup activities regulated under RFCA and
- 2 closure as part of a specific cleanup activity regulated under RFCA

In either case the closure plan described in this Part X or a closure plan modified in accordance with regulatory requirements shall be used to accomplish closure

It is anticipated that final closure for permitted units will occur in most instances as part of building decommissioning regulated under RFCA RFCA provides that partial closure activities in particular the removal of hazardous waste inventories and removing system components from operation will occur before decommissioning begins Some small residual amounts of hazardous wastes may remain in systems and components after initial removal of inventories that is the units will be finally closed as part of decommissioning under RFCA

When partial or final closure is done as part of a specific cleanup activity regulated under RFCA a decision document for that cleanup activity (e.g. an Interim Measure/Interim Remedial Action [IM/IRA] a Proposed Action Memorandum [PAM] or the Decommissioning Operations Plan [DOP] will be submitted and approved in accordance with RFCA Although there will be a decision document for each activity several activities may be consolidated under a single decision document The decision document will reference the applicable permitted unit(s) closure plan already incorporated into the Permit under Part X

If a modification to Part X for a permitted unit is necessary due to the nature of the cleanup activity being accomplished under a RFCA decision document, the modification request will be part of the decision document In that case there will not be a separate permit modification request and the modification will be reviewed and approved (including any required public comment period) as part of the RFCA decision document review and approval process The RFCA decision document will also contain the Closure Description Document information specified in Section B 2 of this Part.

This Closure Plan contains the following information for the closure of the permitted units at the Site identified in Parts III IV and V of this Permit regulatory requirements strategies for conducting closure and criteria to determine if closure has been successful Regulatory requirements are identified in Section B General Closure Information Implementation of the closure strategies and closure performance standards are discussed in Section C Clean Closure by Decontamination Section D Debris Rule Decontamination and Section E Phased Closure

B GENERAL CLOSURE INFORMATION

The following describes the general regulatory requirements necessary for closure of the permitted units at the Site

1 Closure Plan

6 CCR 1007 3 Part 264 requires the Permittee to submit a plan for closure of the permitted units at the Site This Closure Plan addresses the following requirements Part 264 Subpart G Closure and Post Closure (Parts 264 110 through 264 120) Subpart I Containers (Part 264 178) Subpart J Tanks (Parts 264 190 and 264 199) and Subpart X Miscellaneous Treatment Units (Part 264 601) This Part X of the Permit serves as the Closure Plan for the permitted units at the Site

No demonstration of financial responsibility is required under current regulations because compliance with Part 266 Subpart A Financial Requirements is not required for government owned facilities

Post-closure care requirements will be addressed through a modification of the Closure Plan and will be completed in accordance with an approved RFCA Decision Document

2 Content of the Closure Plan and Closure Description Document

Each permitted unit at the Site will be closed in accordance with this Closure Plan. This Closure Plan identifies the methods of accomplishing closure and criteria, in the form of closure performance standards which will be used to evaluate closure performance

In addition it identifies methods by which closure of permitted units may be accomplished through RFCA regulated cleanup activities in accordance with an approved RFCA decision document.

Specific information regarding individual permitted unit closures will be contained in a Closure Description Document. The purpose of the Closure Description Document will be to identify the portions or sections of this Closure Plan applicable to specific permitted unit closures The Closure Description Document will provide information on and rationale for the method of closure the defined extent of the permitted unit, the type of closure to be performed (either partial or complete) the type of contamination to be addressed decontamination method to be conducted decontamination media to be used the schedule for accomplishing closure and other information associated with permitted unit closure activities

This strategy for closure implementation is mandated by the number of permitted units that must be closed and the circumstances under which each of them will be closed relative to the options for closure Additionally due to uncertainties concerning the future need for the buildings containing some of the existing permitted units this strategy allows for their closure as the need arises.

3 Facility Closure Notification

The Director will be notified of the intent to perform partial or final closure of any permitted unit(s) at least 60 days prior to the beginning of closure of the permitted unit(s). Accompanying the closure notification will be the Closure Description Document detailing the portions of this Closure Plan applicable to the permitted unit scheduled for closure. In the case of closures of permitted units being done as part of a RFCA regulated cleanup activity, notification will be accomplished by submittal of the RFCA decision document or by submittal of a closure notification and Closure Description Document.

4 Closure Schedule

- a Final closure of the permitted units identified in Parts III, IV, and V of this permit will be completed by 2015.
- b Closure of individual permitted units is expected to be completed in less than 180 days from the commencement of closure activities. If the amount of time required for closure of a permitted unit will exceed 180 days, the Director will be notified of the additional time necessary to complete the closure and the reason for the delay.
- c The scheduling of closure activities will be coordinated consistent with the integrated management and prioritization of all Site activities through the RFCA annual budget planning process. Final closure of individual permitted units that are performed as part of a RFCA regulated cleanup activity will in most instances be expected to be delayed beyond 180 days after receipt of the final volume of hazardous or mixed waste.
- d Environmental monitoring procedures will allow for the identification of the migration of any hazardous constituents. If during environmental monitoring, unanticipated migration of hazardous constituents is identified, remedial actions to prevent further migration will be evaluated per RFCA.
- e The closure of waste management facilities at the Site will be scheduled in conjunction with the Integrated Sitewide Baseline to occur as part of a RFCA regulated cleanup activity or as an independent activity as need dictates. In some cases, the closures of individual units may occur at the same time other units are undergoing closure.

The actual descriptions of how closure may be conducted under each of the closure options is discussed in Sections C, D, and E of this part of the Permit. The logical sequence of a permitted unit closure is described in the following:

5 Sequence of Activities for Closure

- a The closure of a permitted unit and associated equipment will be accomplished in accordance with this Closure Plan and the Closure Description Document as described earlier in this section.
- b The Director will be notified of the intent to close a permitted unit identified in Part III, IV, and V of this permit within 30 days of the receipt of the final volume of waste at the unit or at least 60 days prior to the initiation of closure activities.

372

- c Where final closure is to be delayed to accomplish closure as part of a RFCA regulated cleanup activity closure will begin as specified in 5 b above and waste inventory will be removed from the permitted unit within 180 days of commencing closure to achieve partial closure. Appropriate means will be used to prevent any further hazardous or mixed waste inventory from entering the permitted unit.

Unit specific closure schedules are currently unavailable for the permitted units at the Site. In lieu of a unit specific closure schedule the ISB will be the basis for determining which buildings or structures are to be deactivated in a given year. From this the permitted units that will require closure may be identified. The plan for the decommissioning of all buildings and structures at the Site is contained in the Decommissioning Program Plan.

- d Decontamination of a permitted unit will be initiated as soon as practical following the removal of wastes or containers. Decontamination of equipment will be done after the last use of the equipment in closure activities or prior to leaving the contaminated area as necessary. Detailed information on decontamination is provided in Part C and D of this Closure Plan.
- e Soil sampling and analysis when required as a part of this Closure Plan will be accomplished in accordance with soil contamination evaluation procedures discussed in Section F of this Closure Plan.

6 General Closure Activities

a Partial Closure Activities

RCRA Regulations generally refer to partial closure as closing one or more of the permitted units at a facility or site as opposed to closing all permitted units. This may occur when specific buildings, structures, or units are determined to no longer be needed.

For the purposes of this closure plan however partial closure refers to the closure of portions of a permitted unit. Some examples include the closure of a tank while the ancillary equipment is left for a RFCA regulated cleanup activity, the closure of individual cargo containers or gloveboxes within a permitted unit, or the closure of an area or areas within a permitted unit.

b Closure of Permitted Units

Closure activities for the permitted units identified in Parts III, IV, and V of this permit will be conducted in accordance with this Closure Plan. Specific information regarding the method of closure for individual permitted units will be provided in the Closure Description Document or RFCA decision document. The appropriate document will be provided to the Division for information as part of the pre-closure notification of the intent to initiate closure of a permitted unit.

Activities to be conducted for accomplishing the closure of a permitted unit will be described in unit specific procedures or documents developed for the particular unit closure. These procedures or documents are not intended to be provided to the Division as part of this Closure Plan.

c Maximum Waste Inventory

The maximum inventory capacity of each of the permitted units is identified in

Parts III IV and V of this permit Authorized waste types and authorized hazardous waste codes are also identified for the permitted units in the referenced sections

d Closure Personnel

Actual numbers of personnel required for the closure of individual permitted units will be determined at the time of closure based on the closure schedule safety and regulatory standards Minimum crews are required for health and safety (H&S) requirements Personnel involved in the closure of permitted units will be qualified in accordance with Part IX Personnel Training of this Permit, and trained in necessary mechanical skills for conducting the closure decontamination techniques and safety procedures necessary to accomplish closure

e Replacement of Equipment and Components

Prior to the closure of the Site some equipment and components in permitted units may require replacement or removal If this occurs the equipment or components to be replaced or removed will be removed from active status and replaced with identical or similar equipment or components

The equipment or component removed from active status will be released from control as a hazardous or mixed waste by being decontaminated in accordance with the requirements of this Closure Plan or managed appropriately as a hazardous or mixed waste The replacement equipment or components shall be capable of functioning as well as that being replaced and any changes to the permit necessitated by the change will be made via a permit modification.

f Final Closure of Units

The options for the final closure of the permitted units identified in Parts III IV and V of this Permit have been developed to meet the intent of the regulatory requirements for their closure and to allow permitted unit closure to be a part of RFCA regulated cleanup activities As a part of closure all permitted units and equipment thereof will be decontaminated as necessary to the appropriate level to meet the applicable closure performance standard or other criteria (i.e. debris standard waste acceptance criteria etc.) for the ultimate disposition of the permitted unit structures and wastes generated by closure activities

Closure plans for the permitted units are predicated on the availability of some combination of on site and off site waste management capabilities for the storage treatment and disposal of inventory and cleanup waste Efforts will be made to minimize waste generation as a result of closure Where possible equipment will be decontaminated

The final disposal of any hazardous or mixed waste generated as a result of closure will be dependent on the nature of the waste and the availability of permitted waste management facilities within the DOE complex and the private commercial sector Wastes generated from closure will be managed and disposed of in accordance with the applicable local State and Federal regulations

The disposition of any hazardous or mixed waste will be dependent on the type of waste and the requirements for treatment and/or storage prior to ultimate disposal Wastes generated as a result of closure activities to the extent possible will be

374

treated in waste treatment facilities at the Site. Current capabilities include waste treatment for solutions with high or low pH that are radioactively contaminated and contain inorganic constituents. Permitted treatment processes at the Site are identified in Part V of this Permit.

The types of waste generated by closure activities will depend on the type of closure conducted, the decontamination methods undertaken, and the results of soil sampling and excavation, if necessary. Specific decontamination methods and soil sampling and excavation procedures to be used are identified in Section C, D and F respectively of this part of the Permit.

g Waste Requiring Disposal as Part of Closure

The amount of waste generated from the closure of a permitted unit or units at the Site will be dependent on the type and amount of decontamination conducted, the size of the permitted unit, and the applicable closure performance standard. The volume of waste requiring disposal will include up to the maximum waste volume held in storage and the waste volume generated during closure of the permitted unit. It is difficult to determine the final amount of waste at the Site that will require disposal as a result of closure; however, an estimate would be at least the total volume of waste approved for storage at the Site.

7 Recordkeeping

The Permittee shall maintain the following closure records at the Site during closure activities and for a minimum of 30 years following certification of closure:

record of sampling activities (date, number, and type)

results of screening activities, sampling of decontamination rinse waters, soil sampling, or groundwater sampling

actions taken to decontaminate or remove waste structures or soils, including contaminated soils

other documentation which verifies that the Permittee is following the work package and the conditions of this permit, and

records of volume of hazardous waste generated during closure, including contaminated soils

8 Amendment of the Closure Plan

6 CCR 1007.3 Part 264.112 requires the Permittee to amend the closure plan whenever changes in the operating plans or facility design occur that affect the Closure Plan or a change in the expected year of closure occurs. 6 CCR 1007.3 Part 264.112(c)(3) requires the Permittee to request modification of the closure plan within 30 days of identification of any event that causes modification of the closure plan to be necessary. In conducting final or partial closure, unexpected events that are identified during the implementation of closure activities may require an amendment of this Closure Plan.

C CLEAN CLOSURE BY DECONTAMINATION

Clean closure of permitted units at the Site will be conducted in accordance with one of the

375

three methodologies (decontamination debris rule decontamination or unit removal) described in the following sections

The objective of clean closure of a permitted unit at the Site is to eliminate the need for maintenance and post closure care due to waste or constituents remaining at the permitted unit or upon unit equipment. Clean closure by decontamination will be accomplished by removing all waste present in the permitted unit, decontaminating all unit equipment and structures removing any and all contamination present due to the operation of the unit and attaining compliance with applicable closure performance standards. If this objective is attained the permitted unit will be certified as clean closed and will require no post-closure care or maintenance

To attain clean closure it will be necessary to conduct and document activities as part of closure in accordance with this Closure Plan. The following identifies standard activities to be conducted for accomplishing the clean closure of a permitted unit utilizing decontamination techniques

1 Waste Inventory Removal

All wastes remaining in the permitted unit to be closed will be transferred to another permitted unit or shipped off site for treatment, storage or disposal. For permitted units that are not actively managing waste at the time of closure verification that no wastes are present within the unit and/or equipment will be obtained

2 Contaminant Evaluation

Decontamination requirements for the permitted unit being closed are dependent on the presence and distribution of contamination in the unit. To determine the degree of contamination present within a permitted unit scheduled to undergo closure the Permittee will conduct an evaluation of the permitted unit. The contaminant evaluation could include the use of process knowledge radiological survey results historical records wipe or smear samples or other non intrusive methods to identify the presence and degree of contamination

The need degree and process for decontamination will be based on the information obtained from the evaluation. For instance for a container storage unit where no releases or only minor releases have occurred and documentation is available to track the life of the unit, it is possible to eliminate the need for decontamination and proceed directly with rinsing and sampling

3 Decontamination

The type and degree of decontamination to be conducted and the decontamination materials to be used will be determined based on the contaminant evaluation of the permitted unit or upon general criteria relative to the entire unit. Two types of decontamination are identified for possible use at the Site solution and mechanical decontamination. Solution decontamination will be conducted when possible due to less destructive results

Selection of the appropriate solution for decontamination will be based on the types of waste previously managed in the unit and the contaminants that are present. Typical decontamination solutions include water with sodium carbonate and trisodium phosphate water with calcium hypochlorite and sodium hydroxide water with sulphuric acid deionized water with ethylenediaminetetracetic acid (EDTA) and citric acid petroleum ether or other organic solvent and water. These solutions may be applied by

376

one or more of the following methods manual application, hydroblasting, foam cleaning or steam cleaning

Decontamination may also be conducted using more physically destructive methods Mechanical decontamination methods could include abrasive blasting scarification spalling and vibratory finishing All of these methods utilize some form of physical force to remove contaminants and surface material from the material being decontaminated

4 Decontamination Activities

Decontamination of the permitted unit will be initiated in accordance with this Closure Plan and unit specific documents or procedures In some cases decontamination will begin by removing any dust or other loose debris by vacuuming the Unit.

Solution decontamination may commence with a solution being applied initially to the area of the permitted unit with contamination most prevalent. For tanks generally the decontamination solution will be introduced into the tank through existing piping If mechanical decontamination is to be conducted steps to isolate the area being decontaminated will be taken The following general principles will be followed while conducting decontamination.

- a Whenever decontamination is being conducted all efforts will be made to contain the contamination as part of H&S protocols Containment of the contamination released through decontamination may be accomplished by the use of temporary structures or other devices For instance plastic sheeting may be placed on walls when floors are being cleaned to minimize contact with overspray or debris resulting from the decontamination technique

Small berms could be placed around areas of higher contamination to confine the decontamination media and the removed contaminants and not allow the contaminants to migrate to less contaminated areas of the permitted unit

- b Decontamination will be carried out in a manner to prevent redeposition and relocation of contaminants In most cases decontamination should be carried out from higher parts of the permitted unit toward the lower portions and from lower contamination areas to areas exhibiting higher amounts of contamination
- c Whenever possible methods which roughen or gouge the surface being cleaned shall be avoided If they are necessary precautions will be taken to minimize the transfer of contaminants due to the decontamination method
- d A primary consideration in selecting a decontamination method will be the minimization of decontamination wastes

Decontamination media will be removed from the surface undergoing decontamination by vacuum or other means and collected Treatment of the decontamination media may occur at the permitted unit undergoing closure in accordance with the generator treatment provisions of the regulations or it may be transferred to another location (on or off site) for treatment The area will then be rinsed with water that will be collected and managed appropriately

5 Decontamination Residuals and Rinsate Management

Residuals from decontamination will be physically separated and collected from the surface or equipment undergoing decontamination. This may include removal by mopping vacuuming vibrating wiping compressed air rinsing or other means. Residuals from decontamination will be characterized and managed appropriately as a waste.

The disposition of the rinsate will be dependent on the requirement for further decontamination. If the rinsate is generated from an interim rinse of a permitted unit and not the final rinse it will be collected and managed as a waste as appropriate. If it represents the final rinsing of the permitted unit undergoing decontamination, it will be containerized, sampled and analyzed to determine compliance with the applicable closure performance standard. Following the completion of sampling and analysis the rinsate will be managed as a waste and treated or disposed of accordingly.

All sampling and analysis will be conducted in accordance with Site procedures that have been developed to comply with the methods specified in SW 846. Following decontamination and rinsing the Permittee will evaluate the rinsate analysis results against the applicable closure performance standard.

6 Closure Performance Standard

A permitted unit, unit equipment or a portion thereof will be considered decontaminated upon removal of all visible waste residuals and

- a for external surfaces when a final rinsate volume of two gallons or less per 100 square feet of surface area rinsed or
- b for internal surfaces of tanks when a final rinsate volume of no more than 5% of the capacity of the tank

produces concentrations of priority pollutants identified as having been managed in the unit and heavy metal concentrations no greater than the maximum contaminant levels for drinking water and a pH between 6 and 9. Analytical tests will be conducted in accordance with the approved lab procedures that meet the requirements of SW 846.

These standards have been developed to attain a reasonable standard for the closure of the permitted units and equipment at the Site subject to clean closure. The standard is intended to provide a minor degree of flexibility to attain clean closure while addressing anomalous situations that can be traced to unit specific issues (e.g. lead containing paint within a unit that could leach when subjected to decontamination activities and rinsate with higher than average levels of naturally occurring metals).

Information regarding unit specific issues that could impact the clean closure efforts will be identified in the Closure Description Document submitted to the Division as information on the permitted unit closure.

If the results of the evaluation indicate the applicable closure performance standard has been met, the unit or unit equipment will be considered clean closed and documentation will be prepared for certification by an independent professional engineer. If the results indicate contamination remains appropriate steps possibly including additional decontamination to remove the remaining contaminants will be initiated.

At any time before or after attempting alternate or additional decontamination procedures the permitted unit structures and equipment that fail to meet the closure

performance standard may be managed as hazardous waste. The decontamination procedures identified in Section C 4 of this Part meet the requirements of a debris rule waste specific treatment standard as an extraction technology. Therefore the closure standard for debris (identified in Section D of this Part) can be used without further washing or other decontamination provided it meets the definition of an extraction technology as provided in 6 CCR 1007.3 Part 268.45 Table 1(A)(1) and (2).

If equipment or structures within the Unit cannot be successfully decontaminated they will be removed and managed as a waste. Following the completion of closure activities for a permitted unit the equipment used during closure will be cleaned using an appropriate method to remove any contaminants that are present.

7 Soil Contamination Evaluation

An evaluation to determine if soil contamination is present will be conducted in accordance with the process steps identified in Section F of this Part.

D DEBRIS RULE DECONTAMINATION

Debris Rule decontamination methods apply to portions of units and unit components for which there is no intended further use or reuse. This determination will be made based on the economic value of a particular component of a unit versus the cost of decontaminating the component to achieve a clean closure standard that would allow for continued use or reuse (i.e. rinsate analysis closure performance standard). All components subjected to this standard must be disposed in accordance with applicable regulatory requirements. Typical candidates for the Debris Rule decontamination standard include components that are impregnated with fixed radioactive contamination tank systems and/or associated ancillary equipment gloveboxes other misc equipment.

Since no portions of permitted units subject to this type of closure will be reused off-site and all debris will eventually be disposed of as waste decontamination utilizing extraction technologies identified in the debris rule are appropriate to attain a clean closure performance standard. The following identifies standard activities to be conducted for accomplishing the clean closure of a permitted unit through debris rule decontamination.

1 Waste Inventory Removal

All wastes remaining in the permitted unit and unit equipment to be closed will be removed and transferred to another permitted unit or shipped off site for storage treatment or disposal.

2 Contaminant Evaluation

Since this closure option is dependent on the decontamination of hazardous debris in accordance with the debris rule the contaminant evaluation is necessary only for the identification of the contaminants present and not the degree of contamination.

Therefore the contaminant evaluation will focus on the hazardous or mixed wastes managed in the permitted unit, the characterization and location of any releases or spills of the wastes having been managed and the location of any staining on the surfaces of structures and equipment within the unit where waste management occurred.

3 Decontamination Options

For permitted units that are to be closed using the debris rule decontamination will be conducted in the form of a waste specific decontamination technology in accordance with 6 CCR 1007 3 Part 268 45 Table 1 By utilizing the applicable waste specific decontamination technology and obtaining acceptable results contamination is removed and a visual closure performance standard is attained Hazardous debris that cannot be decontaminated or visually evaluated due to the physical nature of the debris (e g piping valves etc) will be managed as hazardous debris

4 Decontamination Activities

Prior to land disposal hazardous debris must be decontaminated for each contaminant subject to treatment defined in 6 CCR 1007 3 Part 268 45(b) using the technology or technologies identified in Table 1 therein The following general principles will be utilized for waste specific performance standards

- a Hazardous debris that exhibits the characteristic of ignitability corrosivity or reactivity will be deactivated using one of the technologies identified in Table 1
- b Performance standards identified in Table 1 must be achieved for each type of debris contained in a mixture of debris types
- c Debris that is contaminated with more than one contaminant subject to treatment must be treated for each contaminant using one or more treatment technology identified in Table 1

5 Decontamination Residuals Management

Residuals from the decontamination of hazardous debris will be physically separated from the decontaminated debris This may include removal by vacuuming vibrating wiping compressed air rinsing or other means Residuals from the decontamination of hazardous debris will be characterized and managed as a waste in accordance with the general requirements identified in 6 CCR 1007 3 Part 268 45(d)(1)

6 Closure Performance Standard

Following the completion of waste specific decontamination and the removal of decontamination residuals the Permittee will visually inspect the surface of the material as appropriate against the closure performance standard for a clean debris surface

The closure performance standard for decontamination as hazardous debris is a clean debris surface This is defined as a surface that, when viewed without magnification shall be free of all visible contaminated soil or hazardous waste except that residual staining from soil and waste consisting of light shadows slight streaks or minor discolorations and soil and waste in cracks crevices and pits may be present provided that such staining and soil and waste in cracks crevices and pits is limited to no more than 5% of each square inch of surface area

If the results of the inspection indicate the closure performance standard has been met the hazardous debris will be considered clean closed and will be removed and managed as non hazardous debris for subsequent disposal

Documentation will then be prepared for certification by an independent professional engineer If the results indicate contamination remains appropriate steps will be initiated to remove the remaining contamination or manage the debris appropriately

At any time before or after attempting alternate or additional waste specific decontamination procedures the hazardous debris that fail to meet the closure performance standard may be managed as hazardous waste. If hazardous debris within the permitted unit cannot be successfully decontaminated it will be removed and managed as a hazardous waste.

Following the completion of closure activities for a permitted unit the equipment used during closure will be cleaned using an appropriate method to remove any contaminants that are present.

7 Soil Contamination Evaluation

An evaluation to determine if soil contamination is present will be conducted in accordance with the process steps identified in Section F of this Part.

E RCRA STABLE

This strategy for clean closure allows the Permittee to conduct the closure of the permitted unit in two stages first by rendering a unit or portion of a unit "RCRA Stable" as described below followed by completion of the final stage of closure as part of a RCRA regulated cleanup activity. Once a permitted unit is placed in a RCRA Stable configuration, final closure of the unit is deferred until it is scheduled pursuant to the RCRA budget planning process and prioritized and integrated with other activities. RCRA Stable units will be indicated as such pending final closure in the Master List of RCRA Hazardous Waste Units at Rocky Flats which is updated semi annually. Elements of this closure strategy include the following:

1 Waste Removal

a Rooms and cargo containers

All containerized hazardous and mixed waste will be removed from the unit. Surfaces of the unit (walls floors ceilings tank sides etc) will be wiped down/cleaned to a level that satisfies the definition of a clean debris surface as defined in paragraph D 6 of this closure plan.

b Gloveboxes

All containerized hazardous and mixed waste will be removed from the unit. Surfaces of the unit (walls floors ceilings tank sides etc) will be wiped down/cleaned with the objective of satisfying the definition of a clean debris surface. In the event that the unit's surfaces can not be made to satisfy the clean debris surface definition, the unit will be wiped down to remove as much remaining removable contamination as reasonably possible.

c Tank systems within buildings

Tanks and ancillary equipment will be emptied to the maximum extent possible using readily available means with the objective of achieving less than 3% by volume of holdup in the tanks and ancillary equipment, no significant sludge remaining and no significant risk associated with the remaining residuals.

2 Eliminate Future Waste Input

Following the removal of the remaining wastes to the degree described above in 1 a the

Permittee will eliminate the possibility of further waste introduction to the unit through administrative or physical means. This could include blanking flanges on piping, locking out valves, de-energizing pump circuitry, locking doors to container storage units, or other means necessary to ensure wastes cannot be reintroduced to the unit.

3 Unit Management

After the a unit is placed in a RCRA Stable configuration, the risk posed by the unit will be minimized and the Permittee may implement less stringent unit management practices. RCRA Stable units will be marked or labeled so as to indicate the type and volume of inventory remaining in the unit in accordance with requirements identified in the Colorado Hazardous Waste Regulations. The inspection and monitoring requirements for a given tank system will be determined on a case by case basis considering the type and volume of residuals remaining in the tanks and ancillary equipment.

4 Removal of the Unit

The permitted unit will remain idle until it is dismantled and the equipment and debris are dispositioned appropriately. When the unit and equipment have been removed, closure will be deemed complete and all applicable certifications will be completed and submitted as necessary.

F SOIL CONTAMINATION

During conduct of closure activities, but not later than after the permitted unit structures and equipment have been successfully decontaminated, soil contamination will be evaluated. This evaluation will be either non-intrusive or intrusive based on the following:

- 1 if documentation is available that identifies no spills or releases to the environment having occurred at any time during the operation of the container storage unit, soil contamination as a result of waste management activities within the permitted unit will be deemed nonexistent, or
- 2 if documentation is available for only a part of the life of the container storage unit and indicates no spills have occurred, a visual evaluation will be conducted. This evaluation will document the presence or absence of any visible soil discoloration, spill residues, or other indicators of a spill or release to the environment having taken place from the permitted unit, or
- 3 permitted units that have secondary containment structures which have not been compromised or overtopped by a release of waste during the active life of the unit will not require soil sampling, or
- 4 permitted units that utilize an asphalt pad for secondary containment or as a base on which waste management took place will be considered suspect and will require sampling and analysis to determine the presence or absence of soil contamination, or
- 5 if soil contamination is discovered and through subsequent evaluation, it is determined that it may be effectively remediated as a part of the current closure process, it will be addressed at the time of the ongoing closure activities for the permitted unit, or
- 6 if soil contamination is discovered and it is determined that remediation should be conducted as part of a RCRA regulated cleanup activity, the soil remediation will be

included in the appropriate RFCA decision document. Documentation to accomplish this will include any information necessary to adequately evaluate and review the request to accomplish the proposed action pursuant to a RFCA decision document.

If soil sampling identifies contaminated soils associated with an area undergoing closure a request for modification of the Closure Plan will be submitted which includes a schedule for closure activities. Modification requests for closures being done as part of a RFCA regulated cleanup activity in accordance with an approved RFCA decision document will be accomplished in accordance with the work change documentation requirements of RFCA (including any required public review and comment). A separate permit modification request will not be submitted.

G CORRECTIVE ACTION

The basis of the corrective action program is to be able to determine when releases from permitted units contaminate groundwater or soil and ensure that the contaminants do not impact surface water quality. In the case of groundwater this is accomplished through the use of a groundwater monitoring program. For permitted units a determination regarding the triggering of the implementation of a corrective action program is dependent on the following: the categorization of an incident that involved the release of hazardous waste that could migrate beyond the boundaries of the Site or the discovery of soil contamination in the vicinity of permitted units that are undergoing closure (soil sampling is discussed in Section F of this Closure Plan).

The RFCA has been established as the governing document for accomplishing the requirements of the corrective action program under 6 CCR 1007.3 Part 264.100. Therefore, whenever contamination of soil or groundwater is discovered, corrective action (remediation) is to be addressed and regulated by RFCA.

H POST CLOSURE CARE REQUIREMENTS

The criteria used to determine if a permitted unit undergoing closure will be certified closed or follow post closure procedures will be based upon the presence of soil or groundwater contamination. If these media have been contaminated by a permitted unit and are to be left in place, then post closure procedures will be conducted as identified in the applicable RFCA remediation or corrective action decision document.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Facility Description

**Addendum to the
RCRA Part B Permit Reapplication**

November 1996

FACILITY DESCRIPTION

TABLE OF CONTENTS

I	GENERAL DESCRIPTION	1
A	Facility Name	1
B	Facility Contact	1
C	Facility Mailing Address	1
D	Facility Location	1
E	Site Environment and Climate	2
F	Nature of Business	2
G	Description of Processes Involved in Generation of Wastes	3
1	Radioactive Waste Generation	3
a	Low Level Waste (LLW)	3
b	Transuranic Waste (TRU)	3
c	Special Category PCB Waste	4
2	Radioactive Mixed Waste Generation	4
3	Hazardous Waste Generation	4
4	Sanitary Waste Generation	5
5	Nonhazardous Nonradioactive Refuse Generation	5
H	Waste Management and Treatment Overview	5
1	Solid Radioactive Mixed Waste Management	6
2	Liquid Radioactive Mixed Waste Management	7
3	Solid Hazardous Waste Management	8
4	Liquid Hazardous Waste Management	8
5	Gaseous Hazardous Waste Management	8
6	Sanitary Waste Management	8
7	Nonhazardous Nonradioactive Solid Waste Management	9
II	TOPOGRAPHIC MAP	9
A	Land Uses	10
B	Surface Waters Drainage Patterns and Controls	11
C	Flood Plain	11
D	Injection and Withdrawal Wells	12
E	Access Control	12
F	Buildings and Structures	12
G	Recreation Areas	13
H	Storm and Sanitary Sewers and Utilities	13
I	Wind Rose	13
J	Fire Control Facilities	14
K	Water Supply	15
L	Gas Utilities	15

III	LOCATION INFORMATION	15
A	Seismic Considerations	15
1	Tectonic History	15
2	Historic Seismicity	16
3	Quaternary Faulting	16
B	Flood Plain Standard	17
IV	TRAFFIC PATTERNS	17
A	Traffic Control	17
1	On site Peak Traffic Patterns	17
2	Pedestrian Traffic	17
3	Miscellaneous Traffic	18
B	On Site Transportation of Wastes	18
1	Vehicles	18
2	Routes	18
3	On Site Volume Transfer	19
4	Road Surfaces	19
5	Sampling	19
C	Off Site Waste Transportation	19
1	Road Surfaces	19
2	Vehicles	20
3	Off Site Volume Transfer	20
4	Off Site Access Routes	20
V	REFERENCES	22

LIST OF TABLES

Table B 1	Wind Rose	24
Table B 2	Partial Haz Mat Response Equipment and Supplies	25
Table B 3	Traffic Regulations	26

LIST OF FIGURES

Figure B 1	General Location Rocky Flats Site	27
Figure B 2	Rocky Flats Site and Environs	28
Figure B 3	Legal Boundary Description Rocky Flats Site	29
Figure B-4	Rocky Flats Site Facility Drawing	30
Figure B 5	Land Use Map Rocky Flats Site	31
Figure B 6	On Site Recreation Areas	32
Figure B 7	1995 Annual Wind Rose	33
Figure B 8	Epicenter Plot of Historical Seismicity	34

Figure B 9 Earthquakes from 1870 to 1979 and Potentially Active Faults in Colorado	35
<i>Explanation to Figure B 9</i>	36
Figure B 10 Location of Fault Between Marshall and Golden	37
Figure B 11 Potential Faults Features Near Rocky Flats	38
Figure B 12 Location of Faults Excluding Eggleston Fault	39
Figure B 13 Trucking Route to Rocky Flats Site	40

LIST OF PLATES

B I	Facility Topographic Map with Major Location Details
-----	--

FACILITY DESCRIPTION

This overview section provides a general description of the Rocky Flats Site its location and environs and its hazardous and radioactive mixed waste generation and management facilities. More complete information can be found in other sections of this permit application.

I GENERAL DESCRIPTION [per 6 CCR 100 41(a)(1)]

A Facility Name

Rocky Flats Environmental Technology Site

B Facility Contact

Keith Klein Deputy Manager

Rocky Flats Field Office

Phone 303 966 2025

C Facility Mailing Address

P O Box 928

Golden Colorado 80402 0928

D Facility Location

The Rocky Flats Site is located in north central Colorado northwest of Denver (Figures B 1 B 2 and B 3). The plant site covers approximately 6 550 acres of federally-owned land in Jefferson County Colorado Sections 1 through 4 and 9 through 15 of R70W T2S. The facility is centered at 105 11 30 west longitude 39° 53 30 north latitude.

This location is 16 miles northwest of Denver and 9 to 12 miles from the communities of Boulder Broomfield Golden and Arvada as shown in Figures B 1 and B 2 It is approximately bounded on the north by State Highway 128 on the west by State Highway 93 on the south by State Highway 72 and on the east by Jefferson County Highway 17 (Indiana Street) The legal boundaries of the Plant property are shown in Figure B 3

E Site Environment and Climate

The Site is situated on the eastern edge of a geological formation known locally as Rocky Flats This rocky bench about 5 miles wide in an east west direction flanks the eastern edge of the abruptly rising piedmont of the Front Range of the Rocky Mountains The surface geology of Rocky Flats consists of a thin layer of gravelly topsoil underlain by a 20 to 50 foot thick layer of coarser clayey gravel Water holding capacity in the gravelly soil is poor and the vegetation in the area is sparse Cacti Spanish bayonet, and grasses representative of a mixed short and mid grass plain constitute the main ground cover Introduced Eurasian weeds are also present in the flora Cottonwood trees grow adjacent to watercourses that traverse the property

The climate at Rocky Flats is characterized by dry cool winters with some snow cover and dry warm summers There is considerable sunshine accompanied by minimal and low relative humidity The annual average precipitation for the site is slightly over 15 inches with more than 80% falling between the months of April and September (US DOE 1980)

The elevation of the plant and the major topographic features of the area significantly influence climate and meteorological dispersion characteristics of the site Winds at Rocky Flats although variable are predominantly northwesterly with stronger winds occurring during the winter

F Nature of Business

The Rocky Flats Environmental Technology Site is a government owned and contractor-operated facility It is part of a nationwide nuclear weapons research development and production complex administered by the U S Department of Energy (DOE) The integrating contractor for the Rocky Flats Plant is the Kaiser Hill Co L L C Previous operating contractors were EG&G Rocky Flats Inc Rockwell International Corporation and Dow Chemical Company

The primary mission of the Rocky Flats Site is consolidation of nuclear materials waste management and decommissioning. A ten year plan has been formulated that intends to guide the site to a safe and environmentally sound decommissioning.

G Description of Processes Involved in Generation of Wastes

At the Rocky Flats Site major plant structures are located within a 384-acre fenced area (See Figures B 1 and B 2). The plant is divided into the 300, 400, 600, 700, 800, and 900 areas as shown in Figure B-4. These facilities are comprised of approximately 134 structures containing about 269,000 square meters (2.8 million square feet) of floor space. During Site activities, some wastes with hazardous properties (as defined by RCRA and the Colorado Hazardous Waste Act) are generated. Some of these hazardous wastes become commingled with radioactive materials and are referred to as radioactive mixed wastes. Former production activities and current decommissioning work have generated the types of waste described below.

1 Radioactive Waste Generation

The Rocky Flats Site processed plutonium, depleted uranium, and enriched uranium, as well as trace amounts of americium and neptunium. As a result of these processing operations, three categories of radioactive wastes were generated: low level waste, transuranic wastes, and special category PCB wastes.

a Low Level Waste (LLW)

Low level wastes (LLW) contain naturally occurring radioactive elements such as uranium and thorium. They may also contain transuranic substances at concentrations of $< 100 \text{ nCi/g}$ of waste material. Examples of low level wastes are plutonium contaminated solids and liquids ($< 100 \text{ nCi/g}$) and depleted uranium-contaminated solid and liquid waste.

b Transuranic Waste (TRU)

TRU waste contains plutonium or americium in concentrations above 100 nCi/g . TRU wastes comprise a wide variety of materials, such as plastics, rubber, and metal equipment, as well as sludges, filters, insulation, and combustible materials. TRU waste is segregated and categorized

into separate item description codes or content codes TRU wastes that contain hazardous constituents or characteristics are regulated by RCRA

c Special Category PCB Waste

Radioactive PCB wastes were occasionally generated at Rocky Flats These solid and liquid radioactive PCB wastes are a result of the cleaning and refilling of PCB transformers decommissioning of PCB capacitors and the clean up of PCB-contaminated debris within plutonium handling buildings These wastes are stored and will be disposed per the Toxic Substances Control Act (TSCA) regulations

2 Radioactive Mixed Waste Generation

Radioactive mixed wastes are radioactive and either meet one of the four general hazardous characteristics (ignitability reactivity toxicity and corrosivity) or contain hazardous materials listed in 6 CCR 1007 3 Part 261

Low level mixed wastes are treated and stored at Rocky Flats awaiting shipment to a disposal facility Where practicable low level radioactive mixed waste will be treated to remove the hazardous waste characteristic so that the waste becomes non mixed low level radioactive waste Typical mixed wastes may contain solvents oils acids and bases laboratory chemicals paint and paint thinner plating solutions sludges or solvent contaminated solids Detailed mixed waste generation information is provided in Sections A and C

3 Hazardous Waste Generation

The manufacturing processes generated hazardous wastes as defined by 6 CCR 1007 3 Part 261 Typical hazardous wastes are solvents oils acids and bases laboratory chemicals paint and paint strippers plating solutions sludges and solvent contaminated solids Only wastes originating from areas where radioactive materials are not used may be considered nonradioactive

4 Sanitary Waste Generation

Sanitary liquid wastes are generated at the Site. This waste form consists primarily of shower water, janitorial and rest room wastes, and cafeteria wastes. Additional wastes collected in the sanitary liquid waste system are generated from production cleaning operations (soap and water), film processing rinse water, and cooling tower blowdown. These wastes are sent to the Building 995 Sewage Treatment Plant.

5 Nonhazardous, Nonradioactive Refuse Generation

Wastes which are nonhazardous and nonradioactive include cardboard containers, garbage, paper, refuse, construction rubble, dried water treatment plant sludge, and demolition debris. These wastes are either disposed in a landfill or recycled. The disposal of non-routine or special nonradioactive waste materials (such as asbestos-contaminated strip-out waste) is administratively controlled and occurs only in specific areas of the on-site landfill.

H Waste Management and Treatment Overview

Waste management operations involve transuranic and low-level radioactive wastes, hazardous wastes, sanitary wastes, office refuse, and demolition debris. As the majority of process wastes generated at Rocky Flats are radioactive, treatment and storage facilities have been designed to provide safeguards necessary to manage radioactive wastes. Facilities storing wastes with hazardous constituents are described in Parts III, IV, and V of the Site RCRA Part B permit. The RCRA regulations for the storage, treatment, and disposal of hazardous waste are contained in the Colorado Hazardous Waste Regulations (6CCR 1007.3, Parts 100 and 260.268). DOE policies for radioactive waste management are described in DOE Order 5820.2A, Chapter 2.

Kaiser Hill Company, L.L.C., and subcontractors, in conjunction with the DOE Rocky Flats Field Office, comply with DOE Order 5820.2A and the RCRA regulations by developing and implementing operating and certification procedures and practices consistent with the requirements of RCRA and the Order. Procedures and practices for radioactive wastes are summarized in Waste Management Policy RFP M20-001 and Hazardous Waste Policy RFP M19-004. Satellite and 90-day waste accumulation areas for listed and characteristic hazardous wastes are located in most process buildings and are managed to appropriate operational guidelines (e.g., identification of

collection areas appointment of trained custodians and other waste handlers control of containers and unit specific procedures)

1 Solid Radioactive Mixed Waste Management

Some low level mixed waste from Rocky Flats that meets the land disposal treatment standards is currently disposed at the Nevada Test Site Other waste is stored awaiting on site treatment (eg site reduction) repackaging or shipment for treatment and disposal at an approved DOE facility The low level waste is disposed by conservative shallow land burial practices which assure that the wastes are well contained within the burial site

A set of waste form and package requirements called Waste Acceptance Criteria (NVO 325) must be met before waste is accepted by the Nevada Test Site Rocky Flats is required to certify that any waste sent to these facilities meets these requirements Solid transuranic mixed wastes presently remain at Rocky Flats Site pending the opening of the Waste Isolation Pilot Plant (WIPP) near Carlsbad New Mexico When the WIPP has obtained the proper authorization Rocky Flats will send material directly to that facility for proper disposal in accordance with the land disposal restrictions

DOE has developed a set of criteria which waste must meet to be accepted at the WIPP These criteria called the WIPP Waste Acceptance Criteria (WIPP WAC) specify a number of physical properties of the waste forms and their packages as well as waste package data reporting requirements Each site which will send waste to the WIPP must verify compliance to a DOE certification review board Rocky Flats is presently certifying most of its TRU (mixed and non mixed) waste forms

Solid mixed wastes are generally collected in drums and wooden or metal boxes All containers used for off site shipment meet DOT specifications

Radioactive mixed solid wastes which are contaminated with PCBs were generated during transformer repair or replacements in radioactive contaminated areas within certain buildings on site These wastes are currently stored on site and will continue to be stored until a disposal site or destruction method is approved

2 Liquid Radioactive Mixed Waste Management

Aqueous process mixed wastes are treated in on site facilities to remove the radioactivity from the liquid and convert solids to a solidified sludge. The liquid effluent from these facilities is re used on site in the steam plant and cooling towers. Liquid organic mixed wastes are either stored or solidified and stored awaiting treatment or disposal.

The primary facilities for on site liquid radioactive mixed waste treatment are Buildings 374 and 774. Building 374 is used to treat aqueous wastes from several plant buildings. Aqueous wastes received from these buildings are piped directly into Building 374 through the process waste collection system. Building 374 also receives non pipeline aqueous wastes. Nonpipeline wastes include those wastes received in drums, containers or other types of packaging. The treatment process consists of three stages of chemical coagulation and sedimentation to remove radioactivity. Residual sludges are solidified. The liquid non radioactive effluent is recycled in the site steam and cooling systems.

Building 774 treats aqueous waste primarily from Buildings 559 and 771 and organic waste primarily from Buildings 707, 776 and 777. The bulk of the radioactive contaminants are removed from the aqueous streams through precipitation, generating a sludge which is managed as a TRU mixed or low level mixed waste. The liquid remaining after precipitation is transferred to the second liquid treatment facility (Building 374) for further treatment. A small percentage of the TRU and mixed aqueous wastes are not compatible with the treatment process described above. These wastes are isolated and are converted to a solid form in Building 774 by the addition of cement and other solidifying agents.

The primary facility for liquid organic waste treatment is Building 774. The wastes are pumped to Building 774 from Buildings 707, 776 and 777 via a double contained pipeline. The treatment process, contained in a glovebox, consists of the addition of gypsum, cement, an emulsifier and other agents to wastes contained in a 55 gallon drum.

A detailed discussion of the 374 and 774 treatment operations and the process waste collection system is presented in Part V of this permit application.

3 Solid Hazardous Waste Management

Containers of solid hazardous waste are accumulated or stored within regulated areas which are buildings or on concrete or asphalt pads. The wastes are then transferred to the Main Hazardous Waste Storage Area for storage prior to shipment to off site vendors for treatment, disposal, or reclamation. There is no treatment or disposal of solid hazardous waste at the Rocky Flats Site.

4 Liquid Hazardous Waste Management

Most of the liquid hazardous wastes are accumulated or stored in tanks within buildings. These wastes are sent to Building 374 for treatment via the Process Waste Collection System. A few waste streams are collected in containers and transported to Building 374 via truck. The Building 374 treatment system is discussed in Part V of this application. Part III of this application contains a more detailed description of the building and cargo container storage units.

Liquid organic hazardous wastes are accumulated or stored in tanks within buildings. The wastes are transferred to the Main Hazardous Waste Storage Area for storage prior to shipment to off site vendors for treatment, disposal, or reclamation.

5 Gaseous Hazardous Waste Management

Building 952, containing former RCRA Unit 23, stored waste gas cylinders until late 1995, when the building was emptied and the RCRA Unit was closed. At the present time, waste gas cylinders are not stored on the site.

6 Sanitary Waste Management

Sanitary waste is processed by the sanitary waste treatment plant, Building 995. Conditioning chemicals are added to assist in the destruction of biologically degradable organic waste. Treatment consists of primary sedimentation and a secondary activated sludge process, followed by advanced treatment consisting of sedimentation and filtration. Effluent discharge is regulated by National Pollutant Discharge Elimination System (NPDES) permit number CO-0001333.

The treatment plant has a design capacity of 1 992 500 liters (500 000 gallons) per day Present daily flows usually vary between 757 000 and 1 135 500 liters (200 000 and 300 000 gallons) per day One of two 265 000 liter (70 000 gallon) preparation holding tanks located upstream from the sewage plant serves as a surge basin to smooth out peak flows A second holding tank provides storage capacity for sanitary wastes if emergency retention is required Liquid effluent from the sanitary waste treatment plant can be released to Walnut Creek or released to holding ponds for subsequent on site irrigation Residual solids are concentrated dried packaged and stored for future shipment to an out of state DOE approved waste disposal facility

7 Nonhazardous Nonradioactive Solid Waste Management

The Rocky Flats sanitary landfill (established in 1968) is located within the plant buffer zone north of the plant buildings Nonradioactive solid wastes are transferred to the on site sanitary landfill for disposal This landfill was designed and constructed with a clay seal liner and surface water diversion ditches Routine materials are checked daily for radioactivity at the landfill site before final burial The disposal of nonroutine or special nonradioactive waste materials is prevented by administrative control In the past the landfill has been used for the disposal of hazardous wastes A Post Closure Care Permit is pending Additionally the Site is planning to send some solid nonradioactive nonhazardous waste to an off site landfill

Groundwater and surface water flow in and around the sanitary landfill is controlled by interceptor trenches and by engineered drains The trenches divert upgradient waters around the landfill The drains collect groundwater from the perimeter of the landfill and divert it into a holding pond The holding pond collects subsurface drainage from the landfill Water samples from this holding pond the drains and test wells in the vicinity are collected routinely and are analyzed for a series of parameters including radioactivity

II TOPOGRAPHIC MAP [per 6 CCR 100 41(a)]

Plate B I presented at the end of this section has been prepared to summarize the topographic map information required by 6 CCR 100 41(a) and 40 CFR 270 14(b)(18) This plate is a 1" = 500 feet scale map of the entire 6 550 acre facility and the surrounding areas with a contour interval = 5 feet including a composite map of the 384 acre internal process area and surrounding areas

This exhibit is intended to supply required information for the waste management units addressed in this permit application

The following information is presented

Process area boundaries and buildings

Surface waters

Flood plain information

Run on run-off control structures

Locations of waste management units to be permitted

Storm drains and culverts

Flood control structures

Process waste transfer and collection system

Access and internal roads

Site fences and access gates

Additional Site related information is presented in the following subsections

A Land Uses

Land use plans and zoning maps were acquired for Adams Boulder and Jefferson counties and for the cities of Arvada Broomfield Golden Westminster and Wheat Ridge A composite land use planning map was developed from the above sources and is presented in Figure B 5 There are no recreational facilities within 1 000 feet of the Rocky Flats Plant buffer zone boundary Recreational activities that occur outside 1000 feet of the boundary include bicycle races on

perimeter roads and hiking on open space lands. Outdoor recreational areas on the plant site primarily jogging and walking are shown on Figure B 6. An indoor wellness center is located near Bldg 125. Recreational activities in the general area include the use of Standley Lake for boating, fishing, and water skiing. Standley Lake is approximately 1 1/4 miles southeast of the plant's buffer zone. Rocky Flats Lake (Smart Reservoir) is used by a private fishing club and is 1/2 mile west of the plant. The City of Boulder Open Space Department has developed hiking and nature trails which are approximately 1 mile north of the plant boundary.

Cattle roam freely in the open space along Route 93 between Marshall and Boulder and north of Route 72. Cattle graze up to the buffer zone bordering the south and west sides of the plant.

B Surface Waters, Drainage Patterns and Controls

Five streams flow on or near the Rocky Flats Site. Of these, North Walnut Creek, South Walnut Creek, and Woman Creek drain the areas surrounding the plant buildings; all of these are intermittent water courses. The other two streams in the area are Coal Creek and Rock Creek. The surface water resources are shown on Plate B 1.

North Walnut Creek and South Walnut Creek flow eastward into Great Western Reservoir, which is one of the two water supplies for the City of Broomfield. Woman Creek originates west of the Site, drains the south portion of the Site, and flows eastward into Standley Lake. Standley Lake provides irrigation storage and municipal water.

Coal Creek and Rock Creek drain the area north of the Site. Coal Creek has its headwaters in the Front Range and is the largest stream near the Site. Rock Creek is a small intermittent stream that originates on the Site. Both drainages are separated from on-site drainage by diversion berms.

The surface water resources are shown on Plate B I.

C Flood Plain

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps were obtained for the areas surrounding the Rocky Flats site. The FEMA map indicates a 200-foot wide, 100-year flood plain for Woman Creek extending up to the eastern Rocky Flats boundary. This flood plain

has been included on Plate B I This plan has been extrapolated upstream into the facility based on the peak discharge of the 100 year flood

A review of the topographic map indicates that the permitted waste management units are outside of the 100 year flood plains The elevation for areas where permitted waste management units are located ranges from 5 975 to 6 025 feet above mean sea level Stream channel elevations for the intermittent flow streams near these sites average 50 to 100 feet lower In addition the stream channels are narrow and are characterized by steep gradients of 125 to 150 feet per mile favoring narrow flood plain conditions

D Injection and Withdrawal Wells

The site has no waste disposal injection wells or water supply withdrawal wells Ground water monitoring wells are located throughout the site There are 3 known water wells including 1 drinking well within 1000 feet of the plant boundary

E Access Control

The 6550 acre plant site is surrounded by a barbed wire cattle fence which is posted to identify the land as a government reservation/restricted area Other internal fences and guards control access to sensitive areas of the site

F Buildings and Structures

The locations of buildings parking areas fences and railroad tracks are shown on Plate B I

Site buildings are concentrated in a 384 acre area surrounded by a security fence The 6 166 acres between that fence and the site boundaries serves as a buffer zone Buffer zone development includes an office building modular building complex firebreaks holding ponds environmental monitoring stations a sanitary landfill area a salvage yard power lines inactive gravel pits clay pits and a target range

Two access roads pass through the security fence that encircles the main area of the Site There are approximately 134 buildings within this central facility none of which are over three stories above

the ground Plant visibility from nearby highways varies depending on a viewer's location The most prominent structures are the 200 foot meteorology tower 155 foot water tower three building stacks measuring 69 98 and 151 feet in height and security lights

G Recreation Areas

Public lands are located adjacent to the Site on the east and northwest and southwest boundaries There are no developed recreational facilities on these lands

H Storm and Sanitary Sewers and Utilities

Waste lines collect sanitary wastes and convey them to the treatment plant Sewage plant effluent flows into holding ponds which are routinely monitored These discharges are regulated by the Clean Water Act and have a National Pollutant Discharge Elimination System (NPDES) permit Water for domestic use process uses and fire fighting is provided by the Denver Water Board

Rocky Flats has ditches culverts and underground pipes for collecting and controlling surface water run off Surface water run off from inside the security fence leaves the plant through the North and South Walnut Creek and Woman Creek drainages These waters are impounded and routinely monitored prior to leaving the property

I Wind Rose

Wind temperature and precipitation data are collected on the plant site and summarized annually Table B 1 presents the 1995 annual summary wind frequency of direction The compass point designations indicate the true bearing when facing against the wind These frequency values are also represented graphically in Figure B 7 The wind rose vectors also represent the bearing against the wind (i e wind along each vector blows toward the center) The predominance of

northwesterly winds is typical of Rocky Flats The low frequency of winds greater than 7 meters per second (15 6 mph) with easterly components is also typical for Front Range locations

J Fire Control Facilities

The Rocky Flats Plant maintains a onsite Fire Department with permanent staff and equipment
The Fire Department is responsible for

Responding to fire alarms and fire related emergencies

Performing fire prevention inspections of all buildings and areas within the Site

Ensuring the proper inspection testing and maintenance of fire fighting equipment

Providing training programs in fire fighting techniques and emergency medical service

Providing mutual aid to surrounding metropolitan communities if requested and approved through the DOE

Responding to significant hazardous materials and hazardous waste spills

The Fire Department has firefighters and emergency medical technicians providing 24 hour service Members of the Fire Department receive continual training in fire fighting techniques response to hazardous and radioactive mixed waste material spills and first aid response The Fire Department equipment consists of

Two pumper trucks

Two ambulances

One rescue vehicle/ brush truck

One hazardous materials response van

PPE for all anticipated types of incidents

Plant buildings are protected with various types of fire detection and suppression systems All major buildings are protected by automatic sprinkler systems The Fire Department is also capable of responding to hazardous material spills and incidents with the Hazardous Materials Response Team (HMRT) All HMRT members receive Hazardous Materials (Haz Mat) training as well as continuing education HMRT shall provide identification containment stabilization and decontamination Additional support can be obtained from the Industrial Hygiene Industrial Safety Environmental Restoration Waste Operations and Waste Management groups Response

to the scene shall be made by way of a dedicated response vehicle housed in the Fire Station This haz mat van will carry at a minimum the support equipment listed in Table B 2

K Water Supply

Raw water is purchased from the Denver Water Board This raw water is treated at an on site potable water treatment plant The Rocky Flats Site used approximately 126 million gallons of water during 1995

L Gas Utilities

All of the plant's heating requirements are met by in plant gas fired steam boilers During calendar year 1995 approximately 800 million cubic feet of natural gas were used.

III LOCATION INFORMATION [per 6 CCR 100 41(a)(11)]

The Rocky Flats Site is located primarily in Jefferson County Colorado The north border of the Site is defined by the county line between Boulder County and Jefferson County There is one small portion of a few acres that extends into Boulder County This area is north of the Site proper and is an unoccupied open space within the buffer zone

A Seismic Considerations

1 Tectonic History

The Rocky Flats Site is located about 4 miles east of the Front Range Foothills The Golden Fault is located about 2 miles southwest of the Rocky Flats Site

The present rugged topography to the west of the Rocky Flats Site is the result of ancient tectonics and erosion There is minimal evidence that block faulting has occurred within the last 20 000 years

2 Historic Seismicity

Seismicity in Colorado has been minimal with the first recorded earthquake occurring in 1870. Figure B 8 shows the epicenters of historical earthquakes that have occurred within 200 miles of the Rocky Flats Site. Figure B 9 presents the information on a larger scale. Three earthquakes with Modified Mercalli intensities greater than VI have occurred within 200 miles of the Plant site in 1882, 1901, and 1967. Epicentric locations of the 1882 and 1901 earthquakes are in question. The 1967 earthquake was related to the Derby earthquakes.

From April 1962 through June 1972, over 1,800 earthquakes occurred in the Derby, Colorado area, about 30 miles east of the Rocky Flats Site. The Derby earthquakes were near a deep waste disposal well at the Rocky Mountain Arsenal. The earthquake activities started soon after initiation of pumping of wastes into the disposal well; consequently, it was the hypothesis that the earthquakes resulted from associated fluid pressures.

3 Quaternary Faulting

In 1981, the recent history of the Golden Fault and other faults at the Rocky Flats Site and vicinity were investigated (Dames and Moore, 1981). They did not produce any evidence of tectonic activity along the Golden Fault within the past 500,000 years, and the Fault does not have surficial expressions characteristic of geologically young fault zones. Although bedrock tongues were noted, they were associated with very slow rates of deformation (Dames and Moore, 1981). A graben structure located north of Golden is known to exist but is associated with nontectonic processes.

The northwest trending Eggleston Fault is located approximately three miles north northwest of the Rocky Flats Site but has no evidence of displacement within the past 500,000 years. Consequently, none of the features discussed in this subsection are considered a seismic hazard to the Rocky Flats Site. The criteria of Sections 264.18(a), 270.14(11), and Appendix VI of Part 264 are all met.

B Flood Plain Standard

Documentation has been provided that no hazardous waste management facilities are located within a 100 year flood plain. The precipitation from a 100 year storm is postulated to be 4 inches in a 6-hour time period. A standard 100-year flood map has not been drawn for Jefferson County. Thus the requirements of Section 264 18(b) are met.

IV TRAFFIC PATTERNS [per 6 CCR 100 41(a)(10)]

Traffic flow within the operational areas of Rocky Flats is minimal except at peak hours. Periods of peak traffic occur at shift change 7 00 a m and 4 30 p m. Traffic control is maintained by the security force. On site and off site hazardous waste transportation is coordinated by the Traffic Department and does not occur during the peak traffic periods.

A Traffic Control

Access to the Rocky Flats facility is controlled at the east and west gates. Access to the site is limited to official business. Speed limits on the facility vary between 5 mph and 50 mph. Traffic signs and security officers are used to control vehicle movement.

1 On site Peak Traffic Patterns

Peak traffic hours are during morning and afternoon shift changes which occur from 6 30 a m to 7 30 a m and from 3 30 p m to 5 00 p m. During these times the center lane of the three lane roads becomes a one way lane leading into the Site in the morning and off the Site in the afternoon. Approximately 3 000 people access the Site daily.

2 Pedestrian Traffic

Pedestrian traffic occurs most frequently between buildings which are within 50 to 75 yards apart. Crosswalks appear between buildings across streets and at intersections.

3 Miscellaneous Traffic

Rocky Flats employees use a variety of transportation modes. Bicycles and motorized carts are used as alternative forms of transportation. These are usually used on side streets and paths between buildings. These vehicles must obey all traffic signs.

B On site Transportation of Wastes

The majority of liquid waste transfers are conducted via double contained pipeline. The On Site Transportation Manual lists the approved containers for packaging of waste.

Containerized liquid waste is packaged in approved containers and is further contained in 55 gallon drums prior to transport. Solid wastes do not require secondary containment but do follow similar transportative requirements.

1 Vehicles

Containerized wastes are transported by truck to predetermined storage or treatment areas. An enclosed metal shelled box truck is used for materials contained in drums. Flat bed trucks are used to transport boxes and crates. Tankers are available if bulk liquids are to be transported or a liquid spill has occurred. Placards, manifests and shipping papers are not used for on site transportation.

2 Routes

Rocky Flats does not use a waste transportation designated route system on site because waste movement may occur on all streets and roads. Drivers of vehicles carrying hazardous material substances or waste are trained according to Department of Transportation (DOT) Hazardous Material Training, RCRA and the Rocky Flats health, safety and environmental requirements. The DOT training includes packaging, marking, labeling, driving and parking rules.

The average distance traveled from point of generation to a storage or treatment facility is two miles or less. Because the route is determined by the driver, it is impractical to define the standard.

406

routes Transfers originate at the shipping docks and temporary holding areas while final destinations are the storage areas

3 On Site Volume Transfer

In Fiscal Year 1986 (October 1985 October 1986) a total of 4 982 887 kg (415 240 kg/month) of waste were transported on site Liquid hazardous and radioactive mixed waste volume transported on site was 159 665 kg in the 1986 Fiscal Year (13 305 kg/month) Additionally 10 280 kg of solid hazardous waste were transported

4 Road Surfaces

At the Rocky Flats facility most roads including the access roads are paved and capable of supporting moving loads up to 6 tons per axle Dirt and gravel roads exist on plant site which lead to several waste storage areas and to the on site sanitary landfill Snow removal and road maintenance/repairs are coordinated through the Plant Services Section

5 Sampling

Radioactive and hazardous waste forms are generally well defined at the point of origin due to process knowledge On a periodic basis wastes are characterized for hazardous substances through sampling and analysis as found in Part VI of this Part B Permit Application

C Off Site Waste Transportation

Rocky Flats contracts with commercial firms to transport wastes off site for treatment disposal or recycle The Rocky Flats Traffic Department determines the quantity of waste to be moved and the DOT proper shipping name and manifest requirements for the waste Waste is shipped by truck or train and leaves the site by road or rail Records are maintained on all shipments

1 Road Surfaces

The trackage and rail bed are subject to regular inspection by the D&RGW The company is also responsible for necessary repairs This on site trackage and rail bed are required to meet the same

standards as the trackage and rail bed outside the plant. The roads used for transportation of hazardous materials are capable of enduring moving loads of up to 6 tons per axle and can handle a variety of traffic or vehicle loads of heavy construction equipment, automobiles, tractor trailers, etc.

2 Vehicles

ATMX 600 Series railcars are used to transport mixed wastes in accordance with DOT Exemption E 5948. These rail cars have been in use since 1969 for transporting TRU and TRU mixed waste. The waste is either packaged in DOT 7A Type A drums, which are loaded in cargo containers or packaged in DOT 7A Type A metal crates. There has never been an incident leading to the release of the contents of any drum or crate. When TRU or TRU mixed waste is shipped to WIPP, the TRUPACT II vehicle will be used for transportation. Low level and low level mixed wastes are transported via tractor trailers.

The types of vehicles used for hazardous waste transport are dependent upon the containment of the waste. If the waste is drummed, the transporter uses a tractor towing an enclosed trailer. A straight truck may also be used. A tractor towing a tanker will be used for bulk liquid wastes. Nonhazardous, nonradioactive waste may be transported by a variety of vehicles depending on the transporter.

3 Off Site Volume Transfer

The shipping of hazardous wastes from the Rocky Flats facility is on an as needed basis consistent with risk reduction policies and funding priorities.

4 Off site Access Routes

The only rail access is from the D&RGW main line to the Rocky Flats spur near the junction of Colorado Highways 72 and 93.

Off site transporters utilize three major interstate highways enroute to and from Rocky Flats: I 70 and I 80 east and west, and I 25 north and south. The most common route using Colorado highways is I 25 to U S Highway 36 (Boulder Turnpike), U S Highway 36 west to Colorado

Highway 128 Colorado Highway 128 west to Indiana Street or Colorado Highway 93 Indiana Street south to East Access Road to East main gate or Colorado Highway 93 south to West Access Road to west main gate (See Figure B 13)

TABLE B 1
WIND DIRECTION FREQUENCY (PERCENT) BY FOUR WIND-SPEED CLASSES
AT THE ROCKY FLATS PLANT

(Fifteen-Minute Averages -- 1988)

<u>Wind Direction</u>	<u>Calm</u>	<u>1 3 (m/s)</u>	<u>3 7 (m/s)</u>	<u>7 15 (m/s)</u>	<u>> 15 (m/s)</u>	<u>TOTAL</u>
—	9.25	—	—	—	—	9.25
N	—	1 25	1 57	0 55	0 00	3 37
NNE	—	1 94	1 10	0 13	0 00	3 17
NE	—	1 80	0 47	0 00	0 00	2.27
ENE	—	2.09	0 13	0 01	0 00	2.23
E	—	3 07	0.61	0 01	0 00	3 69
ESE	—	3 46	1 81	0 07	0 00	5 34
SE	—	3.55	2.37	0 21	0 00	6 13
SSE	—	2.92	2.46	0 27	0 00	5 65
S	—	3 44	2.79	0 34	0 00	6.57
SSW	—	3 37	2.35	0 30	0 00	6 02
SW	—	2.97	3 98	0 49	0 00	7 44
WSW	—	3 06	3 06	0 71	0 04	6.87
W	—	3 39	2.87	2 96	0 72	9 94
WNW	—	3 03	4 42	2.79	0 12	10 36
NW	—	3 13	3 44	0 59	0 00	7 16
NNW	—	1 77	2.32	0 45	0 00	4 54
TOTAL	9.25	44 24	35 75	9 88	0 88	100 00

TABLE B 2
PARTIAL HAZ MAT RESPONSE EQUIPMENT AND SUPPLIES

PERSONAL PROTECTION

Gloves (Nitrile PVC Butyl etc)
Splash Suits
Disposable Acid Suits
8 Encapsulated Suits
Head Set communications Radios
SCBA

HAZ-MAT EVALUATION EQUIPMENT

All Plant MSDS
Haz Mat Library
Binoculars
Weather Station
ph Meters
Draeger Tubes (Samplers)
Sample Containers

PLUG & PATCH EQUIPMENT

Type A Capping Kit
Type B Capping Kit
Assorted Wood & Rubber Plugs
Plug and Patch
Oil Dry
Oil and Haz Zorb Pillow
Oil Absorbent boom
Sparking and Non Sparking Tools
Grounding Cables
Sump Pumps

TABLE B 3
TRAFFIC REGULATIONS

- 1 All personnel vehicles entering the plant site shall display the EG&G Rocky Flats vehicle permit in the area of the windshield on the driver's side in such a manner that it may be viewed from the outside

All operators shall display the vehicle permit when entering

All parked vehicles shall have their vehicle permit displayed in such a manner to be viewed from the outside

Operators who drive different vehicles to work must transfer the permit to the vehicle they plan to drive

If an operator has forgotten his vehicle permit he must pull over to the parking area outside the main gates and obtain a temporary permit. Upon exiting the plant he must stop and return the numbered temporary permit to a security inspector

Motorcycle operators are subject to the same regulations. They shall have the permit located in a visible location on the front of the vehicle
- 2 Operators will operate their vehicles in accordance with the State of Colorado traffic rules and regulations
- 3 Reserved parking spaces will only be used by the assigned individual or group: vanpool, off site visitor, handicap, Plant protection, government vehicle, DOE vehicle, etc. These reserved parking spaces are reserved at all times
- 4 All employees shall park in designated lots and spaces only
- 5 Vehicle operators shall drive in the indicated direction only on one way aisles and park with the front of the vehicle facing inward in angle parking spaces
- 6 Motorcycles will park in designated motorcycle areas or vehicle spaces only
- 7 No parking in established vehicle pick up areas
- 8 No parking in designated construction areas

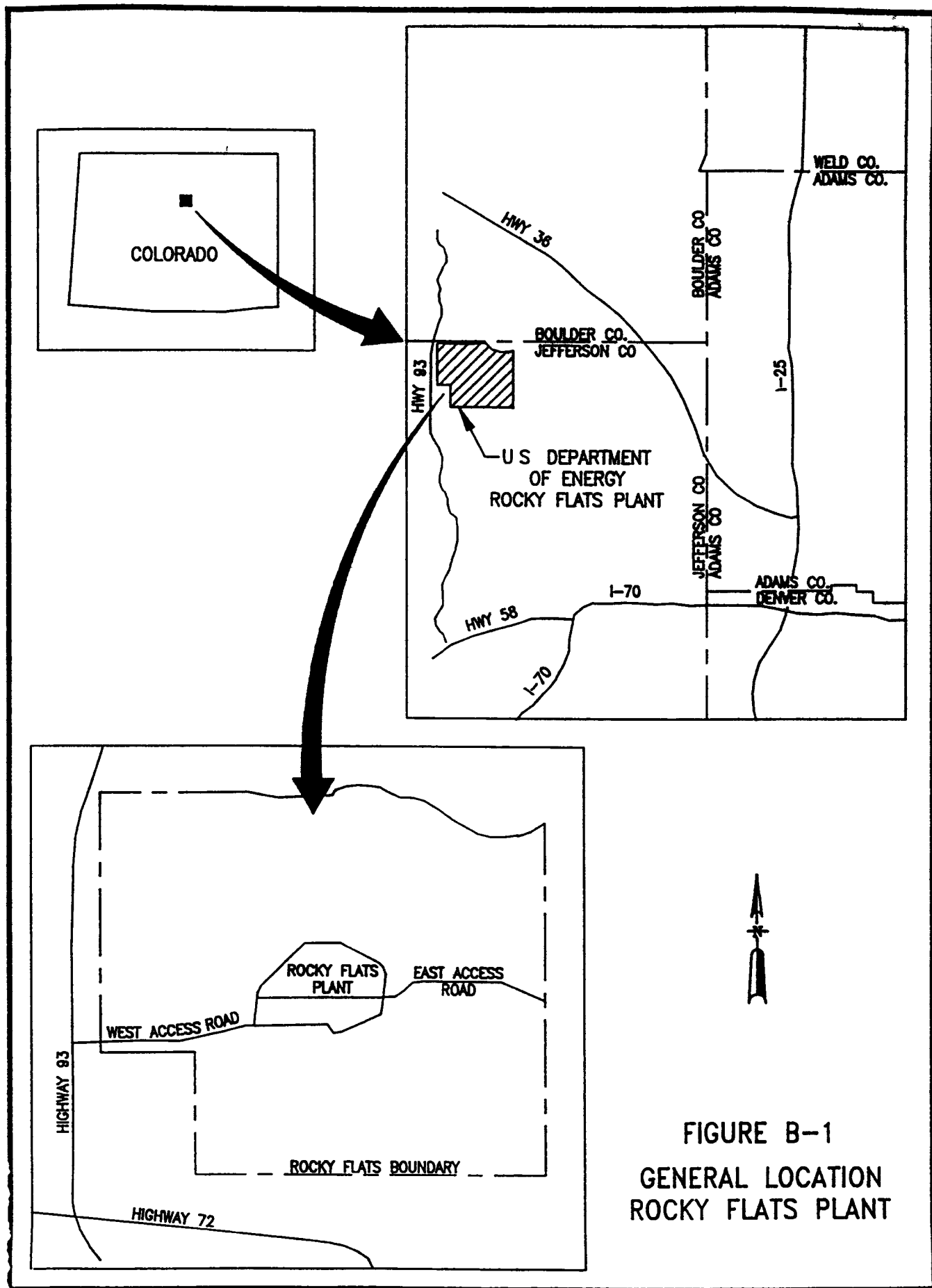


FIGURE B-1
GENERAL LOCATION
ROCKY FLATS PLANT

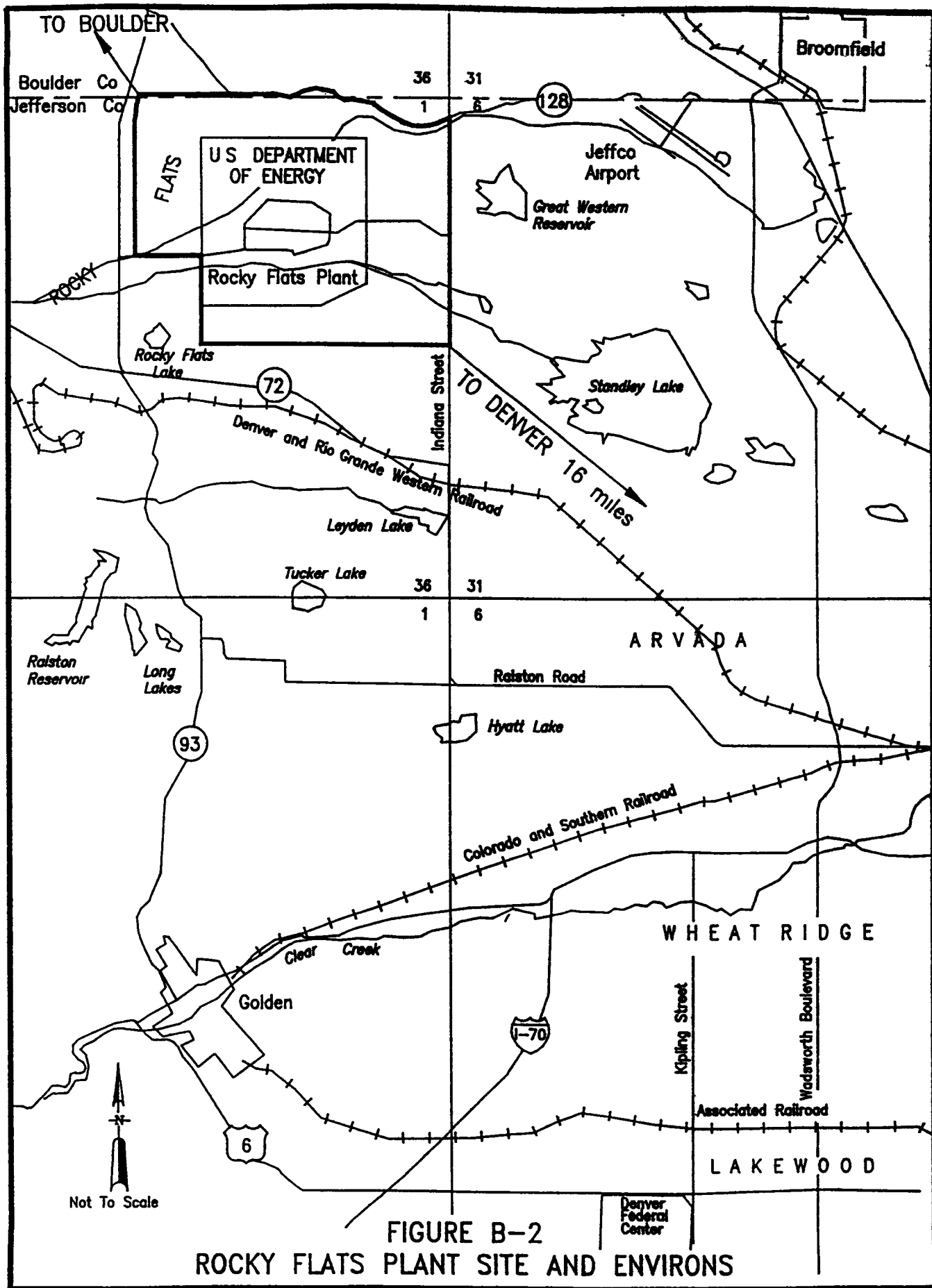
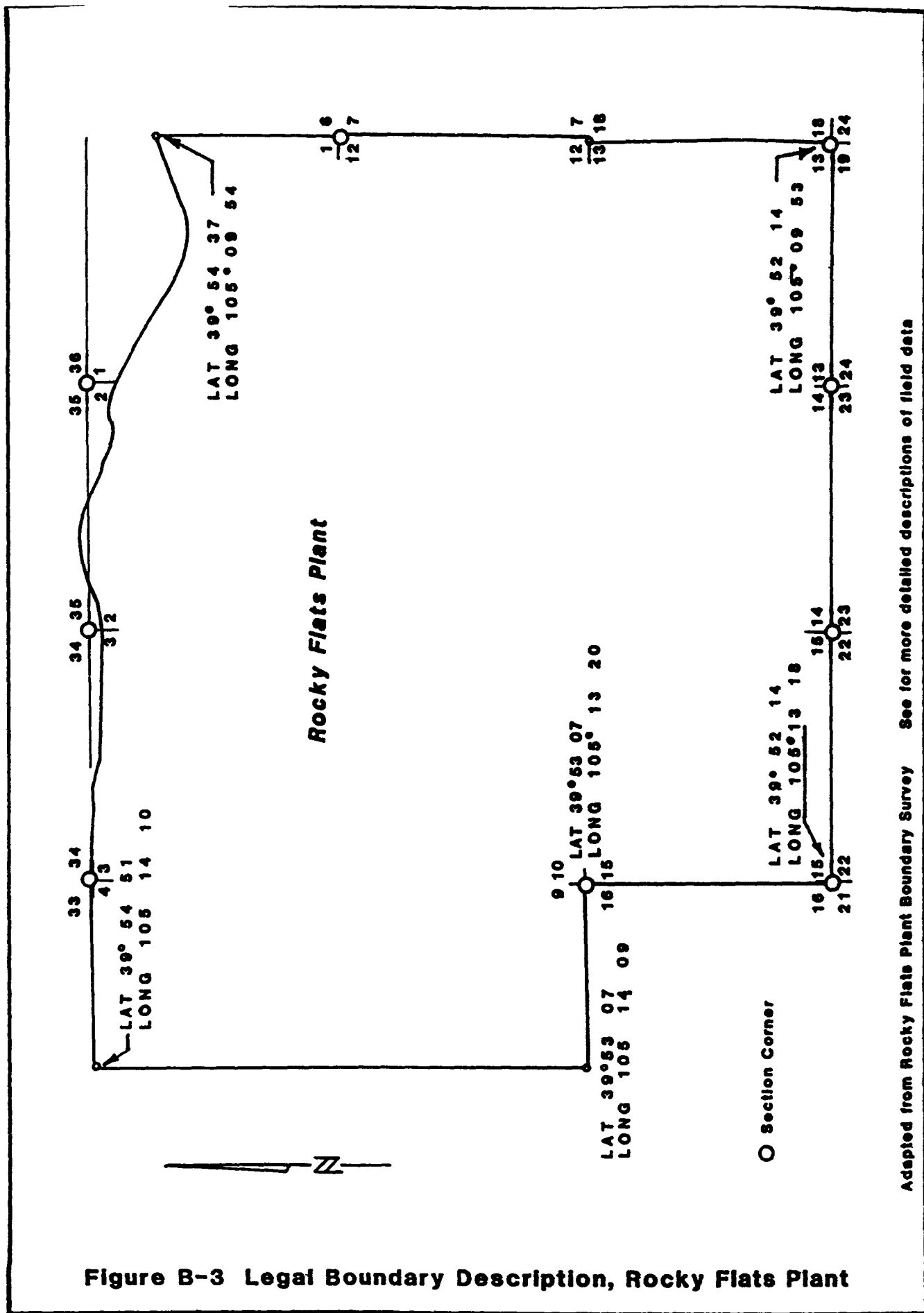


FIGURE B-2
ROCKY FLATS PLANT SITE AND ENVIRONS

413



4/4

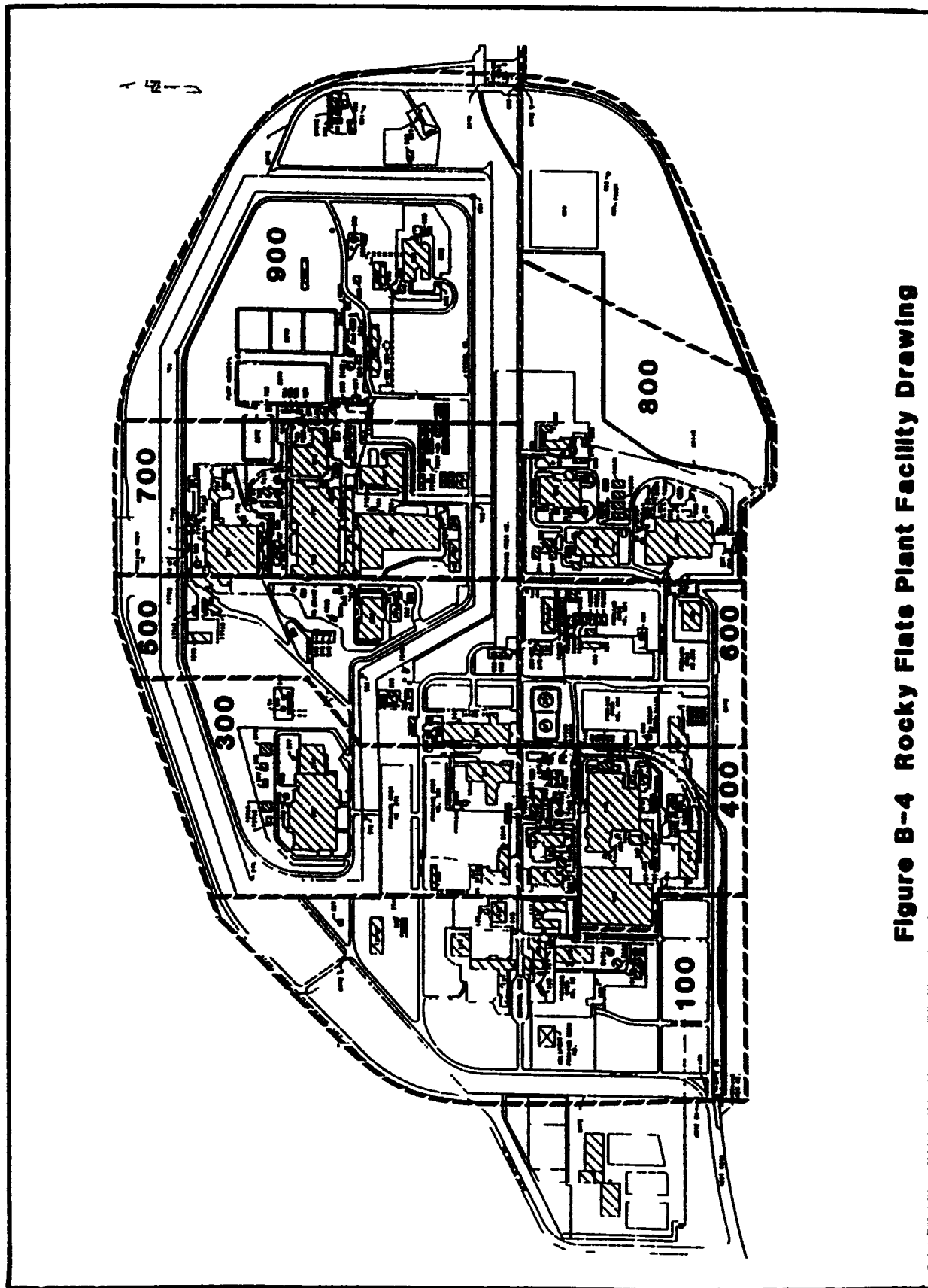


Figure B-4 Rocky Flats Plant Facility Drawing

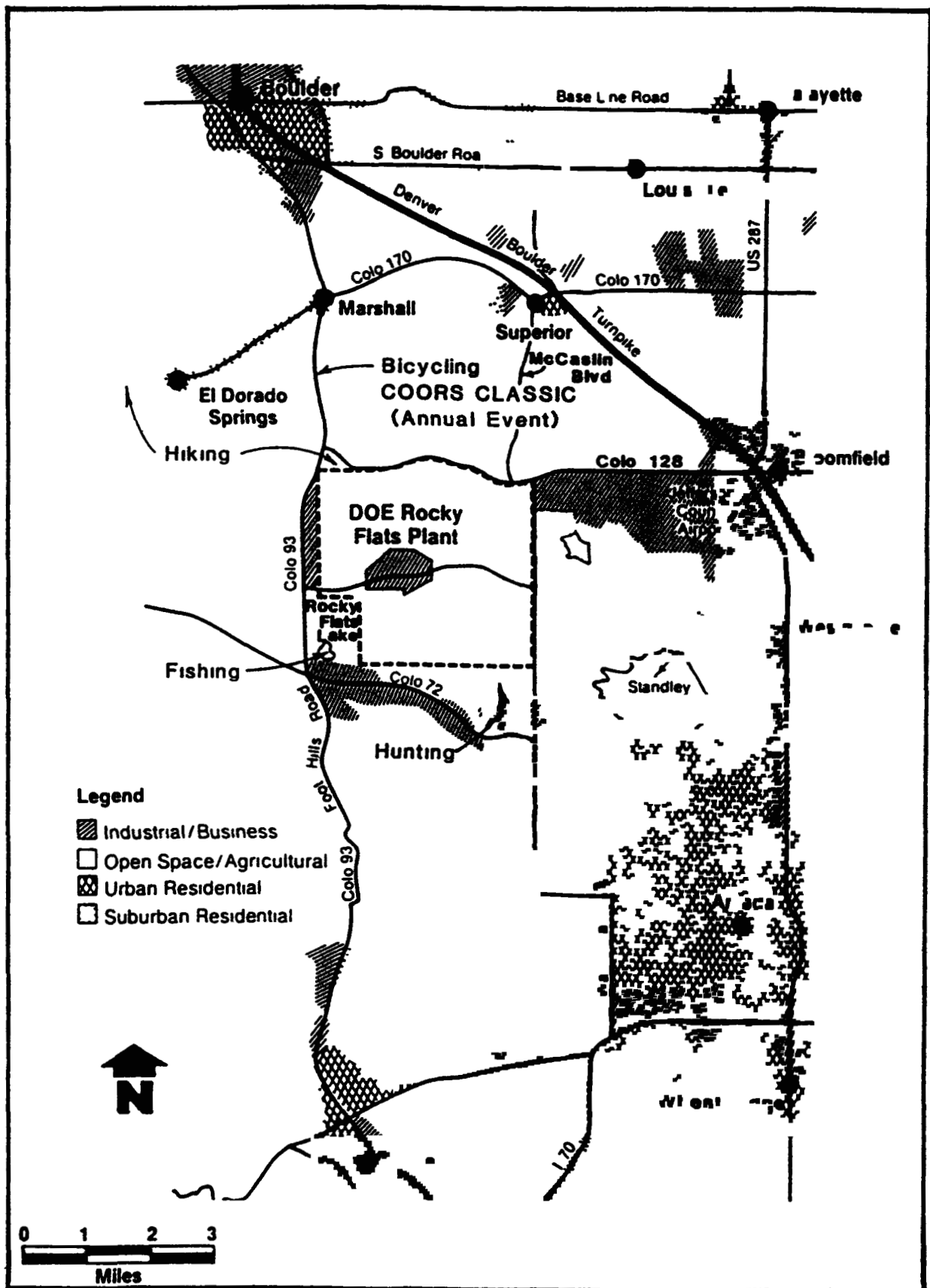


Figure B-5 Land Use Map, Rocky Flats Plant

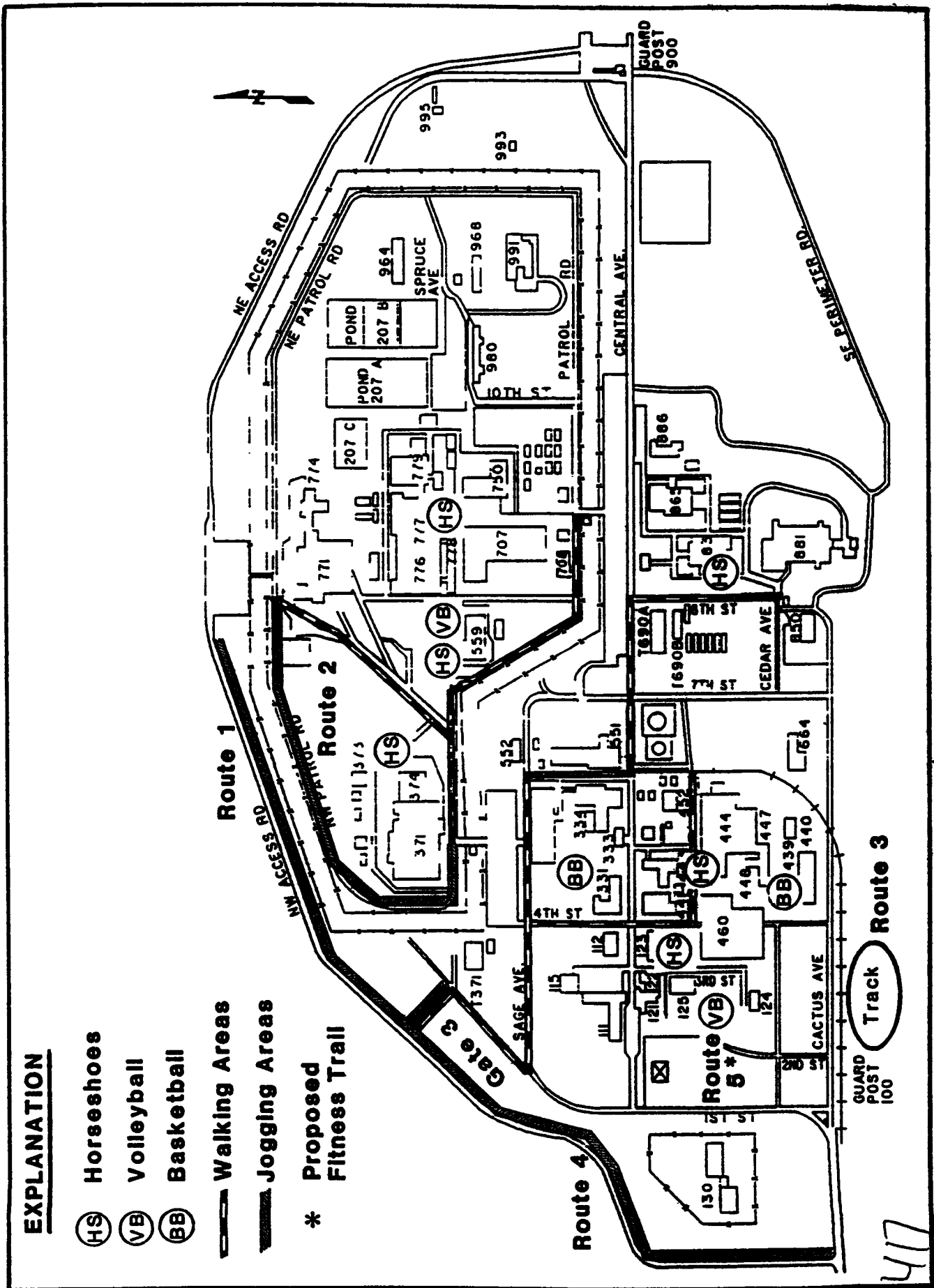


Figure B-6 On-Site Recreation Areas

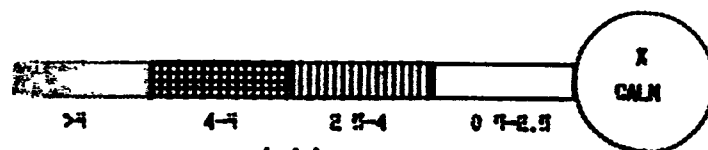
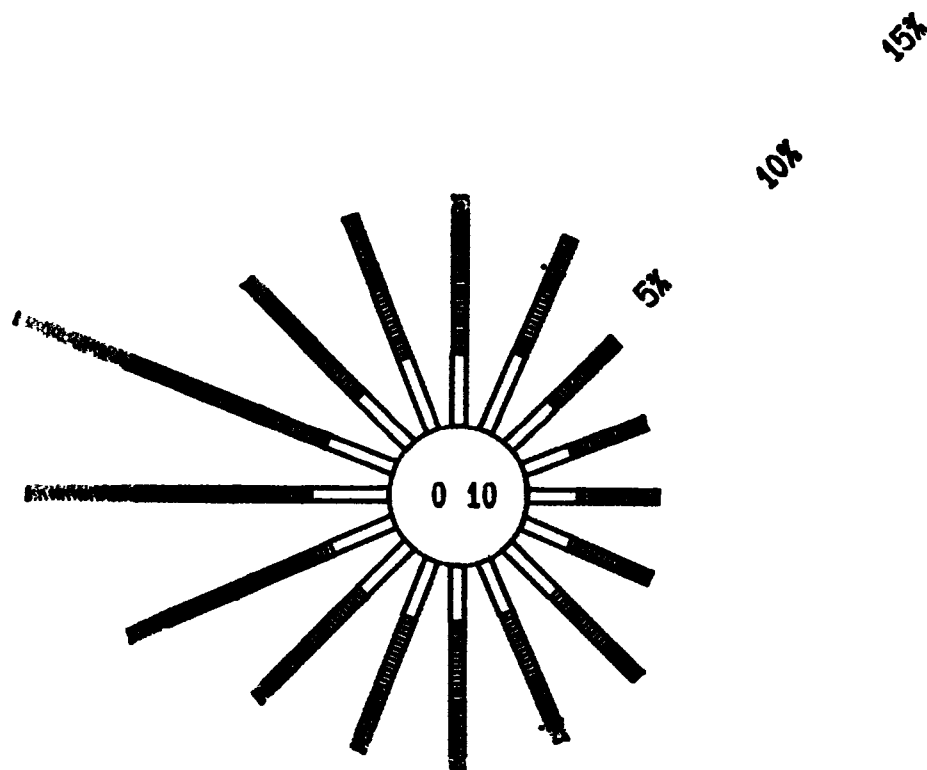
Windrose for the RFETS

1995

N

W

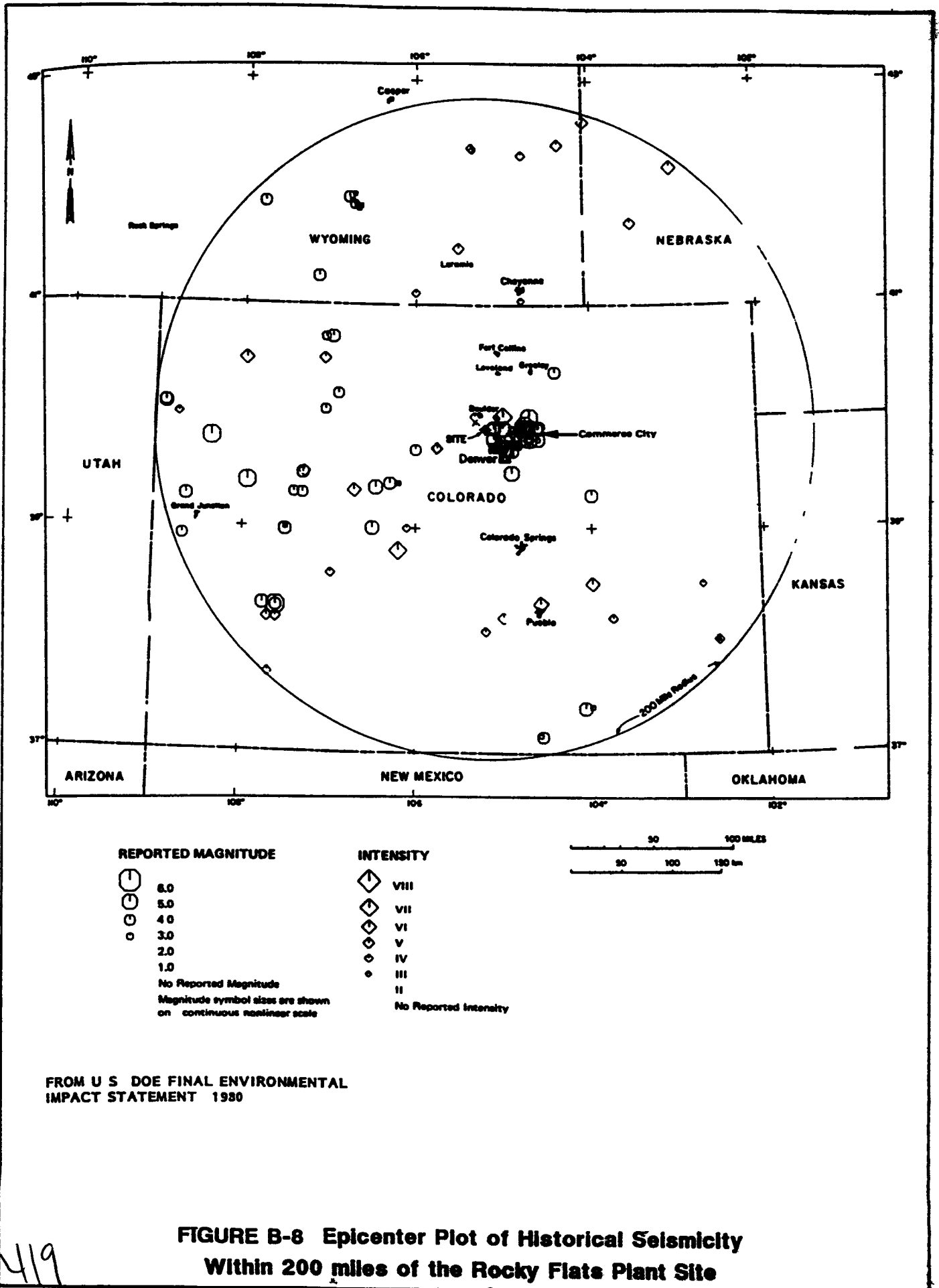
E

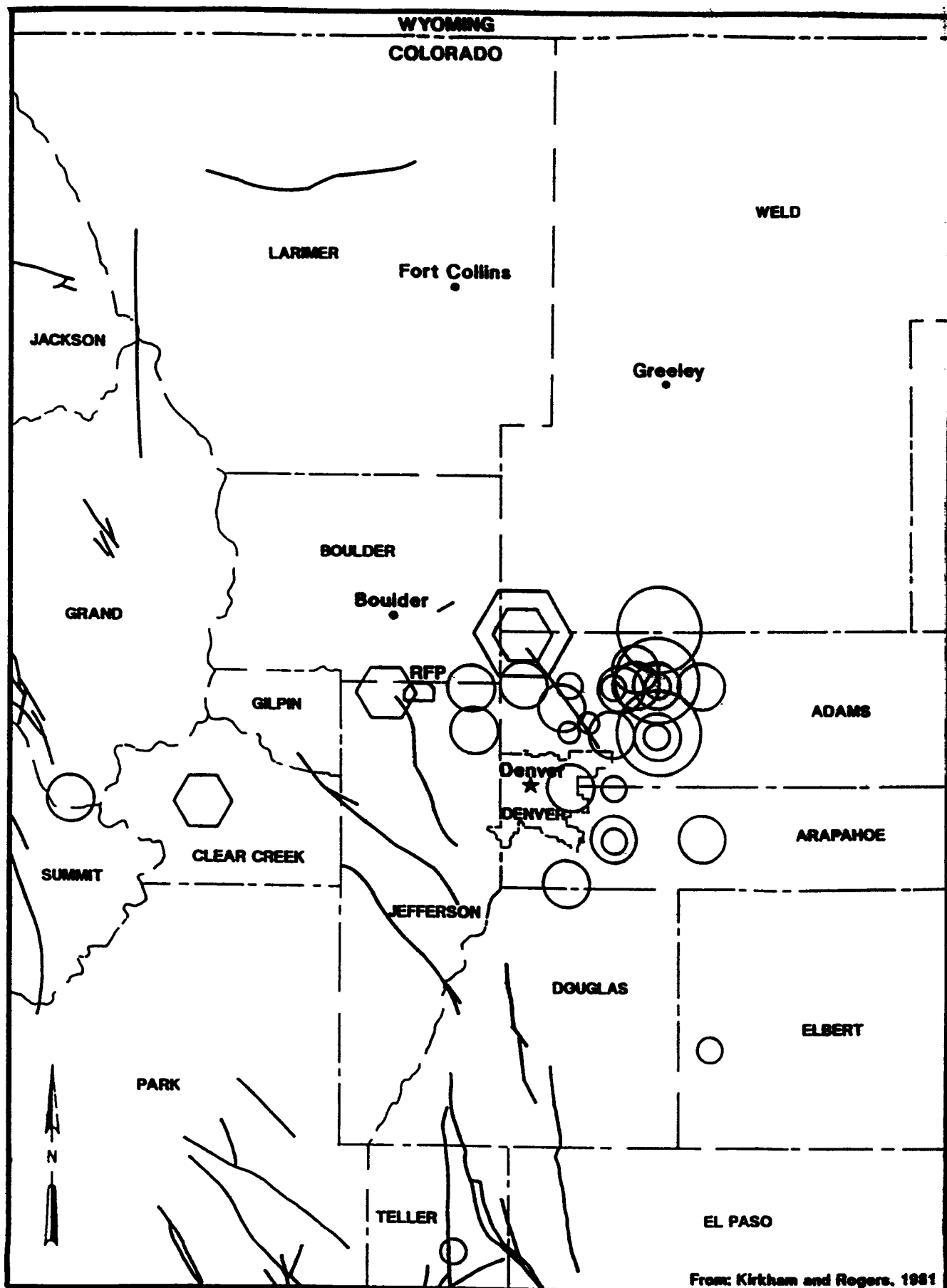


(m/s)

33

418





**FIGURE B-9 Earthquakes from 1870 to 1979
and Potentially Active Faults in Colorado**

420

EXPLANATION TO FIGURE B 9

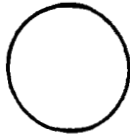
EARTHQUAKES FROM 1870 THROUGH 1979 AND POTENTIALLY ACTIVE FAULTS IN COLORADO



Epicentral location of an earthquake of magnitude 2.5 to 3.9 only selected earthquakes of this magnitude range are plotted near the Rocky Mountain Arsenal



Epicentral location of an earthquake of magnitude 4.0 to 4.9



Epicentral location of an earthquake of magnitude 5.0 to 5.9



Location and intensity of a felt earthquake of Modified Mercalli Intensity III are plotted



Location and intensity of a felt earthquake of Modified Mercalli Intensity VI



Location and intensity of a felt earthquake of Modified Mercalli Intensity VII



Potentially active fault (from Plate I)

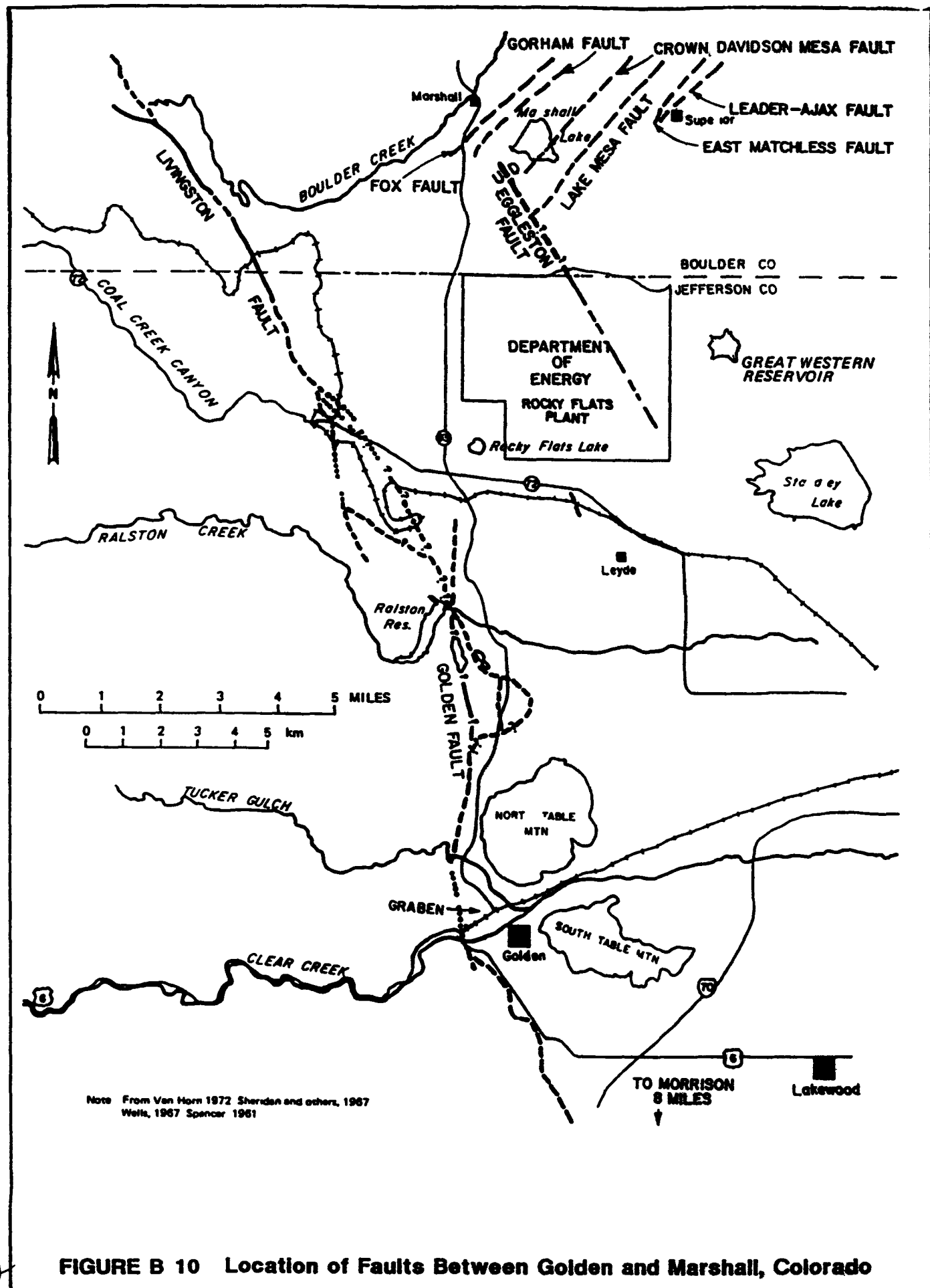
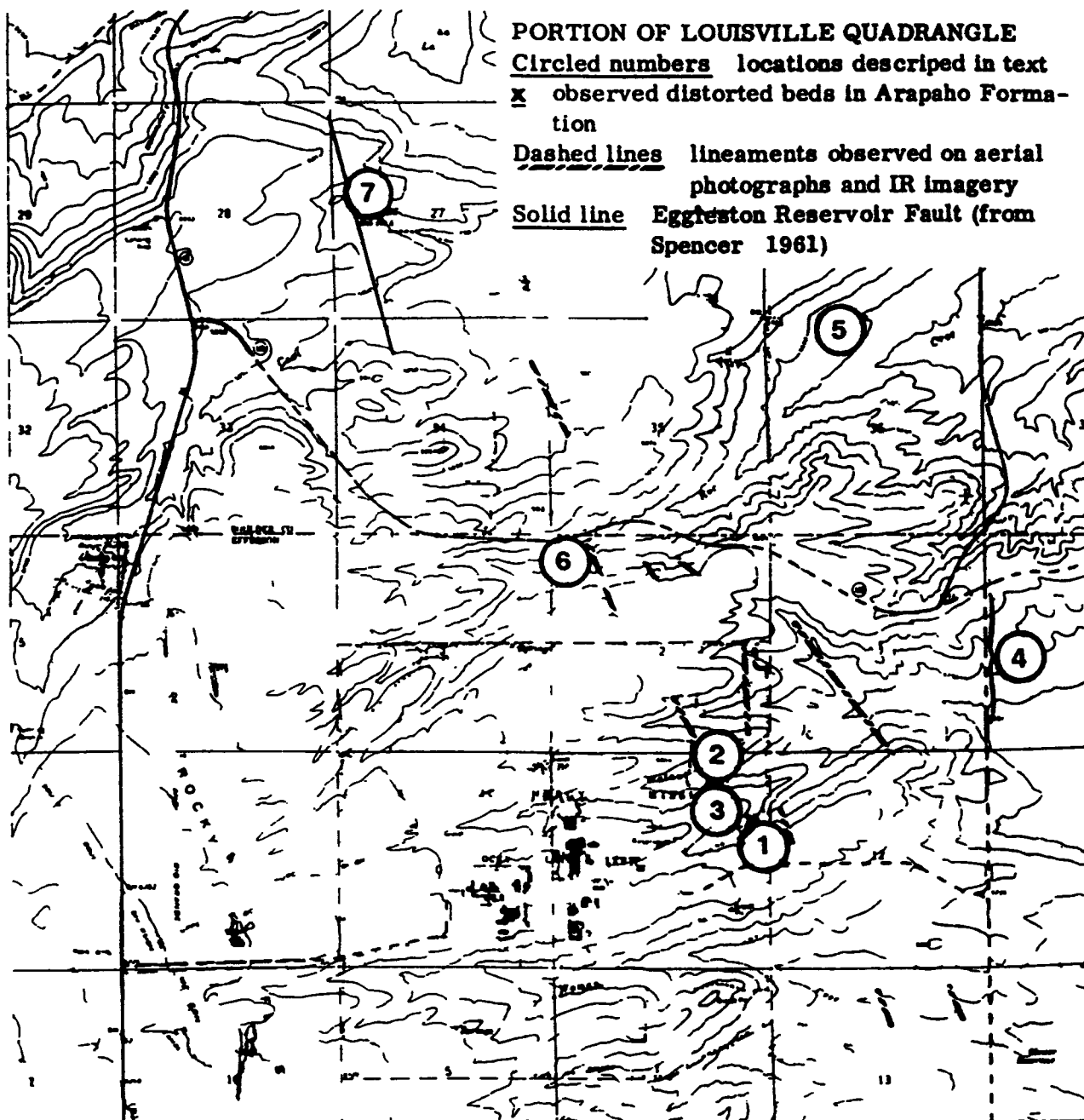


FIGURE B 10 Location of Faults Between Golden and Marshall, Colorado



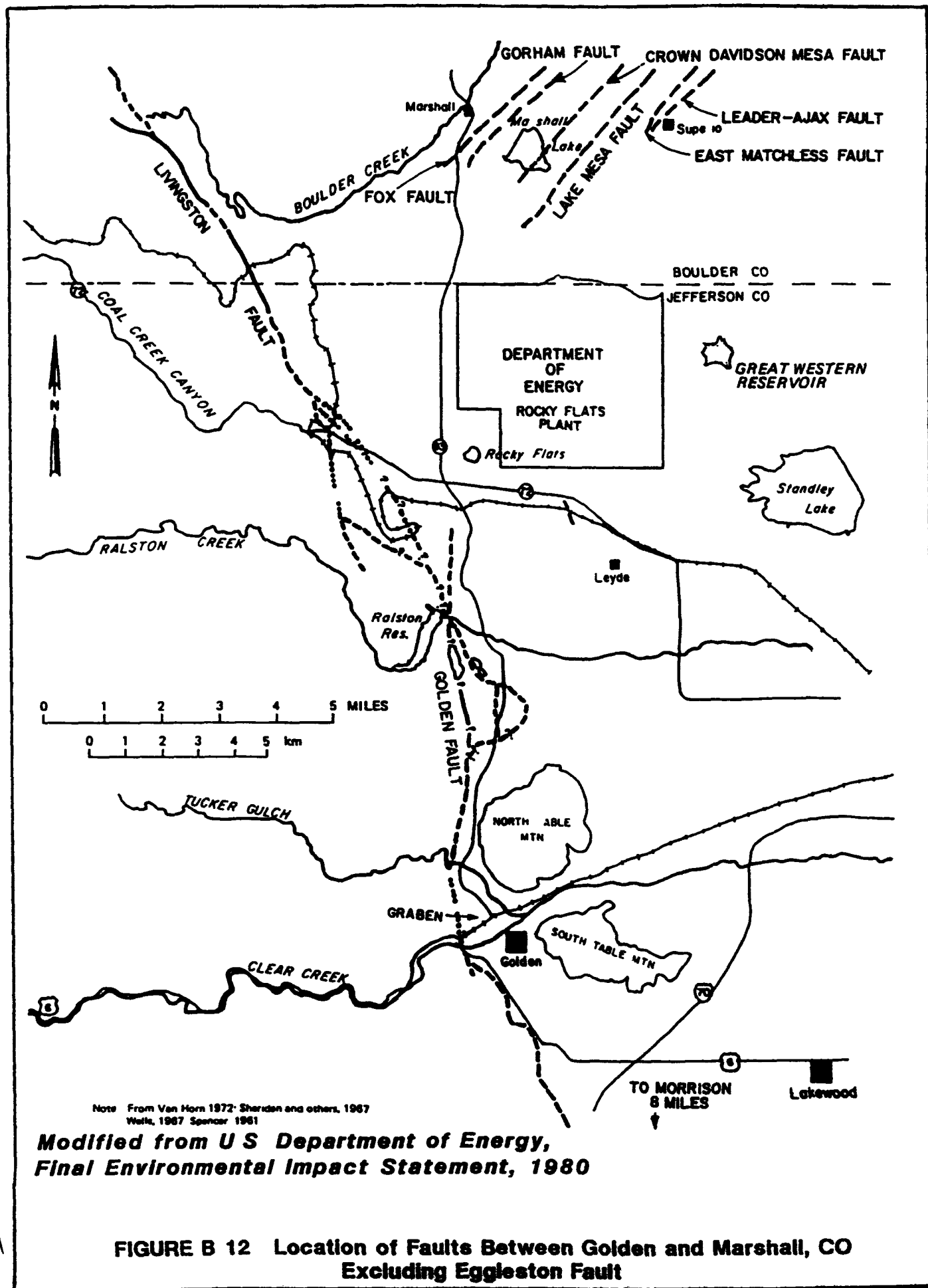
FROM U S DOE FINAL ENVIRONMENTAL
IMPACT STATEMENT 1980

*Modified from U S Department of Energy,
Final Environmental Impact Statement,
Appendix C-1, 1980*



FIGURE B 11 Potential Fault Features Near Rocky Flats

423



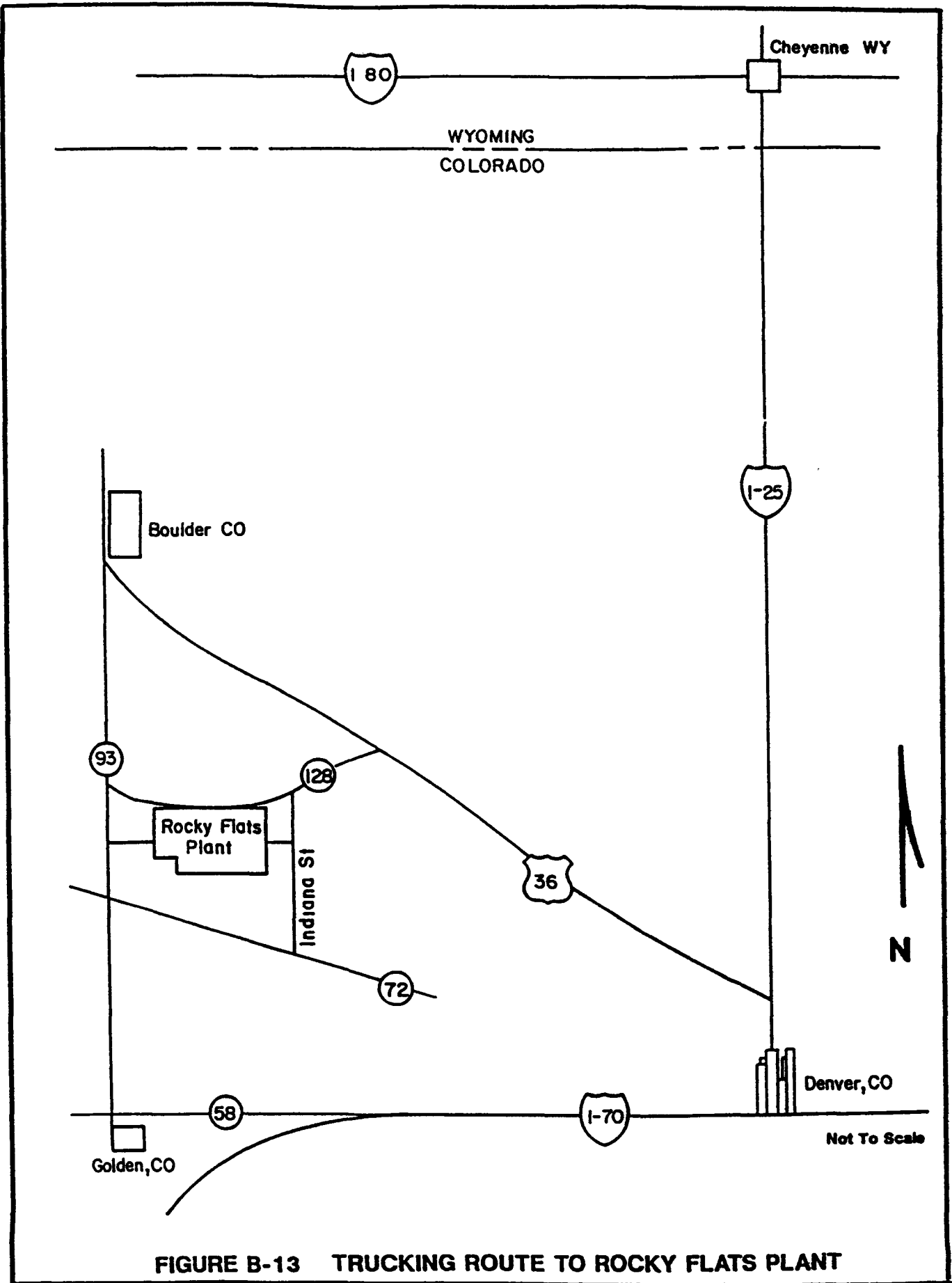


FIGURE B-13 TRUCKING ROUTE TO ROCKY FLATS PLANT

425/425